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THE RAILWAY GAZETTE
33, TOTHILL STREET, WESTMINSTER, S.W.1.

Winter Transport Problems

SOME comments on the difficulties under which the railways are entering the winter have been made by the Transport Correspondent of *The Financial Times*. He points out that the inevitable results of repeated delays in making good wartime deficiencies in railway maintenance daily are becoming more visible, and he goes on to say that the creeping paralysis engendered by the Nationalisation Act is causing the railway machine to slow down even more. After referring to the heavy deficiency in wagons, to which attention was drawn in our last week's issue, and the need, not only for restoring plant and equipment, but of doing so in a co-ordinated manner, he deals with the effect which the Transport Act has had. It has caused uncertainty and some confusion among the staff, and long before it was passed the machine had begun to slow down. That process has continued. The wheels are being turned by habit rather than by conscious will and direction. All kinds of rumours are about of drastic changes in organisation. The article concludes that what is urgently needed is an indication of wise leadership and reassurance that no immense plan of dislocation is round the corner. He agrees that the new controlling authorities are in a position of some difficulty, for they do not take power until January 1, and, meanwhile, can only get ready.

* * * *

British Transport Commission Problems

A few of the problems before the British Transport Commission were outlined by Mr. Roger Sewill, Director of the Road Haulage Association, at the annual dinner of the Hull Centre of the Institute of Transport on October 14. He felt that the nationalisation of transport scheme, cumbersome though it was, would be made to work, largely because the Commission had been able to recruit its staff from persons trained in free enterprise. But even with decentralisation carried to the farthest point, it was inevitable that orders would not be executed as promptly as formerly. Later, the manning of the staff of the Commission would be more difficult. Mr. Sewill said it was rumoured that the Treasury was considering imposing salary standards on State-controlled undertakings. The larger and more complicated the organisation, the better the brains required to run it, and he found it difficult to see how these master minds could continue to be attracted to the Commission if the scale of remuneration was unsatisfactory. He also thought that a wrong approach had been made in the structure of the Commission. Instead of a Railway Executive and a Road Executive, which are to include the operation of goods and of passenger traffic, he thought it would have been better to have separate Executives for goods traffic and for passenger traffic.

* * * *

Home Railway Traffic Receipts

Home railway traffic receipts for the four weeks ended October 5 were £27,741,000, or £923,000 less than in the corresponding period a year earlier. The heaviest fall was shown in passengers, which yielded £708,000 less at £15,467,000. Merchandise revenue was £377,000 lower at £7,916,000. There was an increase of £162,000 from the carriage of coal and coke. The total decline for the four weeks is less than has been recorded recently in similar comparisons, but it must be borne in mind that on October 1 there was an increase in fares and freight charges. Below are given the figures for the four weeks of this year compared with a year ago, and also for the first 40 weeks of this and last year:—

FOUR WEEKS ENDED OCTOBER 5, 1947

	1947 £000	1946 £000	+ or − £000	Per cent. + or −
Passenger ...	15,467	16,175	−708	−4·4
Merchandise ...	7,916	8,293	−377	−4·5
Coal and coke ...	4,358	4,196	+162	+3·9
Total ...	27,741	28,664	−923	−3·2

AGGREGATE FOR 40 WEEKS OF THE YEAR

	1947 £000	1946 £000	+ or − £000	Per cent. + or −
Passenger ...	151,058	159,596	− 8,538	− 5·3
Merchandise ...	70,387	80,496	−10,109	−12·5
Coal and coke ...	40,872	38,000	+ 2,872	+ 7·5
Total ...	262,317	278,092	−15,775	− 5·7

The total decline to date is now £15,775,000 at £262,317,000.

At the rate of the first 40 weeks the aggregate decrease of gross receipts for the full year would exceed £20,500,000; the increase in fares and charges may tend to effect some improvement in the downward trend, but so far as net revenue is concerned, the very heavy increase in expenditure, both for labour and materials, also has to be taken into account.

* * * *

A New B.E.T.R.O. Service in U.S.A.

The initial success of a new B.E.T.R.O. service in the U.S.A., whereby assistance is given to importing firms to find British sources for the goods they require, was reported on page 335 of our September 19 issue. One part of this service which has come in for a certain amount of criticism both in the United States and in this country is that which provides for the export of British patents. It has been said in this country that manufacturers are being advised to sell their technical secrets for a "mess of pottage" and in America that B.E.T.R.O. is inducing British industry to contravene the Anti-Trust Laws. These criticisms were answered by Lt.-Colonel H. A. P. Disney, Director of Administration, B.E.T.R.O., last week, when he pointed out that there was nothing new in the idea, and that it was simply a development of a world-wide practice whereby manufacturers in one country licensed those in another to make their products on a royalty basis, with a clause in the contract to protect the seller from any unfair competition that might arise from re-export to other countries. The sole object of the service was to assist British firms, whether they were interested in visible or invisible exports, and the advice to dispose of patent rights was given only where it was impracticable to export the actual goods.

* * * *

Shortage of Railway Wagons

The effect of the five-day week and of staggered hours which have been introduced by a number of firms in the Midlands was considered at Birmingham recently at a conference of the representatives of the railways, Midland chambers of commerce, and manufacturers. On behalf of the railway companies it was explained that they were working with 1,009,318 wagons out of a total stock of 1,208,845; the balance of 199,527 were under, or awaiting repair. The highest priority had been given to the supply of materials for wagon repair, but there were 48,696 fewer wagons available than at the same date last year. The first call on available wagon supplies was to be for the transport of coal, and the speedy turnround of wagons was vital. The effect of the five-day working week was that the railways were endeavouring to do in five days what was formerly done in six or seven. In the Birmingham area alone there were about 1,000 firms operating the five-day week, and despite urgent appeals there were still many which declined to bring staffs on duty on Saturdays for the reception of their traffic. Staggered hours also had resulted in transport difficulties, and railways had already received notice from some traders that they were unable to accept goods on certain days because they were closed as a result of power cuts. The meeting adopted a recommendation that every effort should be made to hasten the turnround of wagons.

* * * *

Rolling Stock Exports and Home Needs

The increasing appreciation of the difficulties which are facing the main-line railways as a result of the grave shortage of wagons, and to which reference has been made in a number of occasions in our columns, has brought forward suggestions that supplies of rolling stock intended for export should be diverted to domestic use. This is a suggestion which recurs with almost monotonous regularity in times of wagon stringency in this country, but it takes no account of certain fundamental factors. Wagons manufactured for export are not necessarily suitable for use on the home railways. In many cases they are of different gauges of line, and often, when, as is sometimes the case, they are standard-gauge wagons, the structure gauge of the country for which they are intended is considerably more generous than that in Great Britain. At the present time the most practical way out of the problem arising from wagon shortage is to achieve a greater usage and quicker turnround of the available stock, and at the same time to take all practicable measures to effect speedy repairs of the all but 200,000 wagons now under or awaiting repair.

* * * *

Travel for Pleasure

The new President of the Railway Students' Association, Sir Alexander Carr-Saunders, gave his inaugural address on October 15 from the standpoint of a member of the public with a friendly interest in railways. Sir Alexander is Director of the London School of Economics. His speech, which is reported on page 475, did not spare criticism where he thought it due, and those features of railways of which he approved he urged to be adopted more widely. One of these was the observation car, for he confessed to a liking for a rearward view, and if possible for a forward one as well. Both were provided in some types of railcar, and he sketched his ideal of a railway vehicle of the future, taking the shape of a railcar with rubber tyres to eliminate noise and vibration. He considered that the public would travel in such cars for the pure fun of it. Their accommodation, of course, would be limited, but as the prospects of increasing fares seem likely to restrict the number of people who will be able to afford railway travel of any kind to a privileged few, the time may come when they will be adequate. But we thought there were going to be no privileged few in the future!

* * * *

G.W.R. Zonal Goods Organisation

A reorganisation of the methods of handling miscellaneous goods traffic throughout the G.W.R. system is nearing completion. As described elsewhere this week, the new arrangements are on a zonal basis, the principle of which is the concentration of traffic at a railhead and a limited number of sub-railheads in every zone, so as to increase the possibility of making up full wagonloads to a destination from which there is direct road delivery to the consignees. In this way overnight delivery normally becomes possible even when sending goods between stations in rural areas. Wagons loaded at a sub-railhead are sent as often as possible direct to the sub-railhead serving the consignees, but when this is impracticable they are despatched to the railhead in the appropriate zone, from which there are regular scheduled trunk road services to the sub-railheads, and delivery is made by the sub-railhead motors. In addition to the improved service for the public, various railway operating advantages are described in our article, and a noteworthy feature of the scheme is the small expenditure involved in adapting goods stations for working it. The delays once inherent in despatching miscellaneous items by goods train used to create an unfavourable impression of railway service among the widely diversified public who used these facilities. Improvement in this respect therefore should have a widespread and favourable influence on public relations.

* * * *

New Light on the Norris Locomotives

The record of a painstaking research into the history of the American locomotives built by Norris, of Philadelphia, which were imported into this country between 1839 and 1842, was presented in the Newcomen Society on October 15. Mr. P. C. Dewhurst, M.I.Mech.E., whose abilities as a locomotive historian are widely known, infused—characteristically—an attractive liveliness into a little-known subject in which much of the evidence was gathered from the laconic Minute Books of the Birmingham & Gloucester Railway. These books eventually passed to the Midland Railway, and thence to the L.M.S.R., and through the good offices of the late Sir Henry Fowler, former Chief Mechanical Engineer, and Mr. G. R. Smith (the present Secretary of the company), Mr. Dewhurst was enabled to see these documents and put together the rather confused history of the Norris locomotives. Some long-lived fallacies have been dispelled in consequence. The difficulties of operating a line having a long gradient of 1 in 37 were evidently quite unappreciated by the Birmingham & Gloucester Railway's Engineer (Captain W. S. Moorsom). Admittedly, the Bury engine, which was tried on the Lickey, was unsatisfactory with heavy loads, but—what is not generally known—it outshone the Norris engines with lighter loads. Both designs were very unsuitable, and it was not until McConnell took charge that any competence was shown in handling locomotive matters.

Festina Lente

THE Transport Act passed in August vests the whole of our railway undertakings in the British Transport Commission on January 1, 1948. From that date the Commission will have to wrestle with the problem of unifying the administration of the existing railway systems. The Railway Executive will be its agents for conducting railway operations and "shall, to the exclusion of the Commission, be treated as the employer of any officers or servants," so long as they are engaged on railway work. The Chairman and most of the members of the Commission and Railway Executive have been appointed and are proceeding to assemble staff on a generous scale in offices assigned to them.

Presumably, the first business of the Commission will be to submit to the Minister of Transport a scheme delegating appropriate functions to the Railway Executive. The Act requires the scheme to be approved by the Minister and published in the London, Edinburgh, and Belfast *Gazettes*. The preparation of this scheme no doubt will involve the consideration of some of the numerous questions inherent in the sudden changeover from private management to State ownership.

We used the word "sudden" in the last sentence to emphasise the difference between the term of less than 5 months available to arrange the nationalisation of transport and the period of nearly 17 months which elapsed between the passing of the Railways Act, 1921, and the grouping of the old companies on January 1, 1923. There is a further striking difference between the two reorganisations of our transport system. During the three years from 1919 to 1921 negotiations were going on between the Government and the railway companies —indeed the scheme of grouping embodied in the Railways Act was practically the plan proposed by the Railway Companies' Association. The railways thus had ample notice of the approaching "amalgamation." There was no need for them to adjust their affairs in a great hurry, and within each "group" they were free to settle their methods of management as they deemed best.

Today unification is being imposed on the railways against their will, and, up to the time of writing, we see few signs of frank consultation between the new statutory bodies, which are to rule the roost in future, and the representatives of the railway undertakings to be transferred to their control at the end of this year. Yet without the hearty co-operation of these representatives, we cannot conceive how plans can be evolved for carrying on the day-to-day work which will answer satisfactorily in practice.

In this connection we would recall that, on the whole, the companies losing their separate identities in 1923 entered on amalgamation in a hopeful spirit. The strong members of each group were in a sound financial position, while the weaker members felt that they had found allies whose support would be worth while. Then railway reserve funds had been refreshed by the sum of £60,000,000 awarded by the Railways Act, 1921, as compensation in respect of Government possession of the railways between 1914 and 1921, and grouping was expected to yield large economies. As it happened, the first year of amalgamation, 1923, was one of rather artificial prosperity, so that railway traffics and dividends were kept at a high level. The full brunt of road competition was still to come, and so the four main-line companies established by the Railways Act started off well, though troubles were soon to fall on them in plenty.

On the eve of unification, there is a great contrast to the state of things 25 years ago. As a result of 9 years of Government control, the railway companies are not in good heart and much of their property has deteriorated in physical condition. The lines have been used intensively, but have been starved systematically of materials and equipment. At long last the Government appreciates that the railways cannot supply transport without the constant renewal of permanent way, locomotives, carriages, and, above all, wagons.

When it is almost too late, the authorities see that, if railway transport fails, all hope of increased production in industry vanishes. They have granted priority to railway requirements, but are driven to confess that arrears of rolling stock repairs and renewals are not being overtaken. The railway companies are striving to keep their services going in these adverse circumstances, but cannot be expected to show any enthusiasm for the new *régime*.

It is certain, too, that many thoughtful railwaymen do not regard the creation of the British Transport Commission as likely to remedy the railway situation. There is a complete absence of optimism in well-informed circles about the outcome of the provisions of the Transport Act, coupled with a good deal of uneasiness on the part of many individuals about their own prospects when they have to look to the Railway Executive as their employer.

Altogether, the Commission and its Executives are setting out on a great adventure in anything but auspicious weather. If they are going to win through, they should pursue a policy which will restore the confidence of the railway managing and supervisory staff. We know of nothing in industry to surpass the pride of a good railwayman in his work and his loyalty to his company. It will be disastrous if that helpful spirit is deadened by too much straining after uniformity. We hope, therefore, that the familiar names of the main-line railways will be retained and that abrupt changes, whether in designations or in long-established customs, will be avoided. Having regard to the change in the country's economy since the Transport Act was first drafted, we think that the Transport Commission should "hasten slowly" welding the four main-line companies into one complete unit.

* * * *

As the "Railway Age" Sees Us

VERY many of our subscribers, both at home and overseas, also read our weekly American contemporary, the *Railway Age*, but for the enlightenment of those who do not, and remembering the lines of Robert Burns ("Oh wad some Power the giftie gie us to see oursels as ithers see us"), we reprint the following editorial which appears in the *Railway Age* of September 27, entitled "New Dealism is Pretty Lively for a Corpse." If there is any consolation, and it is a poor one, in this article, it is that in our contemporary's view the U.S.A. is likely to take the same "wrong turning." We await with interest the *Railway Age's* comments on the British Transport Commission, and its Railway Executive:—

The further round of wage increases which has now hit the railroads indicates plainly that, despite the election returns, the New Deal theory—that wealth is created by increasing the amount of paper money paid out rather than by increasing the production of useful goods—is not dead. The American people could learn a valuable lesson as to where this kind of foolish, and indeed almost Satanic, economic doctrine leads by contemplating the sad estate of our good friend and ally, the once mighty Britain.

Smart people, it is said, learn from the experience of others. The less alert learn only from their own, while some are unable to learn from either. This nation is afforded a matchless opportunity for the painless acquisition of information on how not to conduct its public business by the spectacle now being exhibited by the Socialist Government in Britain—and the lessons are appropriate because most of Britain's troubles are merely our own in exaggerated degree.

What is happening over there is that a bunch of reformers have captured and are holding political power by providing—temporarily—a substantial part of the electorate in the lower economic brackets with a better standard of living than they ever enjoyed before. In Britain, as in America, such a programme arouses the sympathy of a large number of political neutrals whose hearts are firmer than their heads—and who do not stop to consider that, if this programme improves the condition of the poor, temporarily, at the expense of the nation's productive capital, the eventual result will be to impoverish everybody, including those who are now benefiting from the politicians' generosity.

The London *Economist* enumerates some of the huge tasks which the British Government has undertaken, in part, as follows:—

> The maintenance of a standard of nutrition which is definitely higher than prevailed before the war for fully half the people. In the face of a world shortage of food, high consumption is encouraged by subsidies.
>
> Creation of a national health service and the extension of the national educational system.
>
> A considerable extension of social insurance.

XUM

The creation and full employment of a [subsidised] building industry larger than ever before.

And all of these items are piled on top of an effort to repair war damage, to re-equip the major industries, and to expand exports—these last-named goals, of course, being necessary if the country's productive capacity, on which a high standard of living depends, is to enjoy any permanence. The programme isn't working, for Britain isn't exporting enough to pay for her imports, and Uncle Sam is paying the current deficit and is being asked to ante up more billions to continue the process. Says the *Economist*:—

"As a nation we are trying to consume much more than we produce. We do not, of course, succeed in doing so—except to the extent that we are borrowing from foreign countries or using up our working capital. . . . Every service industry that can increase its output with little use of materials is over-expanded, so that labour is drawn into football pools and the like and away from more essential industries. The trade unions exploit the shortage of labour to extort more pay for less work, so that the very fact that the supply of goods is below the demand for them leads to a further restriction of supply. . . . The lack of incentives for either employer or wage-earner and the tremendous suction applied by the domestic market" has a depressing effect on exports, upon which exports the continuance of high living standards ultimately depends.

A return to free markets and a suspension of political support to high levels of consumption—*i.e.*, the abolition of all rationing, and price and wage controls—could quickly correct the situation by putting price tags on things which would truly represent their actual cost. Demand would shrink to equal the supply and the economic crisis would be at an end—but the process would be painful and politicians with an urge to stay in power have no zest for such heroic action. The *Economist* does not recommend this drastic step; it still believes in a considerable degree of governmental "planning" but, it adds, "the experience of the last two years has considerably dimmed that faith."

In fairness to the Socialists, it is pointed out that the Conservative party has practically the same programme, except for the nationalisation of basic industries. One might well ask, however, what essential difference there is between nationalised and "private" business, so-called, if all prices, wages, and material supplies are subject to strict Government control, and virtually all profits and incomes beyond a low maximum are taxed away.

In looking over the entire programme of the British Socialists it is difficult to find any important point wherein it differs materially from the economic doctrine which is still dominant in governmental circles in this country. The only real difference is that Britain is trying to keep its programme going even though the country is busted—is trying to give goods away which don't exist, and to deprive her energetic and enterprising citizens of their property for the benefit of those with less zest for hard work. The identical course is, certainly, being pursued in this country to a slightly lesser degree, only that we have not been at it long enough to be busted—yet. Nobody could have imagined a little over thirty years ago that so rich a country as Britain then was could have gone broke so fast, either.

The parallel is uncomfortably close in another respect, too, namely, that the opposition party in neither country is much more dependable for soundness of doctrine and performance than the party holding the reins of government. The most powerful exponent of socialised housing in this country is not a proclaimed New Dealer, but a staunch Republican. With us the principal protagonists for the extension of socialism in transportation are not our forthright professing Socialists, but business leaders who would feel themselves slandered if called New Dealers.

Well, if we persist in treading the path we have been following—artificial wage levels, punitive taxation of initiative, continued invasion of the economy by socialised productive plant—we shall be unable to lay the blame anywhere except upon our inability to learn. Providence has done all it can by offering us, without pain or cost to ourselves, a flesh and blood exhibit of the end result of such behaviour.

And now in Britain has come the ominous decision to tell people where and at what they must work. If people decide not to be directed in their economic activities by the peaceful persuasiveness of free market prices, they must inevitably prepare to submit in the end to being directed by a policeman, backed up by a jailer and a hangman. There once was a song, doubtless not popular any longer, which has as its refrain the line: "Britons never, never, shall be slaves."

* * * *

Palestine Railways

DURING the war years the annual reports of the Palestine Railways were suspended for reasons of economy and security. A combined report for the financial years 1942-43 to 1945-46 has now been issued, a copy of which we have received from Mr. A. F. Kirby, General Manager. For the years 1943-44 to 1945-46, the report covers, also, the working of the ports, which were taken over by the railway administration from April 1, 1943.

In addition to the main line from Rafa to Haifa, and that from Jaffa to Jerusalem, the administration works the sections of the Hedjaz Railway in Palestine from Haifa to Acre, Haifa to Samakh, and Tulkarm to Affula; and the line of the same railway in Trans-Jordan from Nassib to Ma'an. It also operates the railway from Rafa to El Kantara, forming the international railway link between Egypt, Palestine, and the North.

The Palestine Government owns only the standard-gauge railways within Palestine (Rafa to Haifa, and Jaffa to Jerusalem). The standard-gauge link from Rafa to Kantara is operated by the Palestine Railways Administration on behalf of His Majesty's Government; and the Hedjaz Railway sections are worked by the administration on behalf of the Palestine Government, which acts as a trustee on behalf of His Majesty's Government, any losses on this section being a charge to Palestine Government funds.

Heavy traffic demands from civil and military sources brought satisfactory results during the war years, aided by the almost complete absence of road competition. Little change in these conditions was seen in 1945-46, although the report records signs that they were beginning to recede at the time of publication. A decline in long-distance passenger traffic to and from Egypt is expected, such bookings being affected by political conditions; and with the gradual cessation of military traffic, a heavy reduction in passenger revenue must be expected. Some results for the years covered by the report are compared in the table below:—

OPERATING RESULTS OF ALL SECTIONS WORKED BY THE PALESTINE RAILWAYS

	1942-43	1943-44	1944-45	1945-46
Passenger journeys ...	2,767,309	3,312,903	3,284,311	3,334,403
Paying goods tonnage ...	2,874,669	3,478,916	2,803,846	2,611,461
	£P.	£P.	£P.	£P.
Passenger earnings ...	688,570	975,851	861,533	873,581
Parcels, luggage and mails	67,611	43,846	48,623	52,537
Goods	1,539,549	1,980,432	1,608,214	1,763,799
Livestock	17,924	17,023	23,148	36,227
Miscellaneous	171,725	98,318	116,604	137,161
Total earnings	2,485,379	3,115,470	2,658,122	2,863,305
Working expenditure ...	1,581,294	2,134,669	2,321,453	2,285,956
Surplus	904,085	980,801	336,669	577,349

The exceptional wartime traffic demands followed hard on years of financial stringency, during which time the railways not only had made little improvement to plant and equipment, but also had suffered severely from damage by sabotage during political disturbances.

The first impact of wartime traffic, in 1941, fell most heavily on the Hedjaz Railway to and from Syria. This line was extended from Ma'an to Naqb Ashtar to serve the Port of Akaba, and the capacity of the lines in Trans-Jordan was expanded to take a two-way traffic of 600 tons a day. With the improvement of the war situation, however, it did not become necessary to use the Akaba route as an alternative to the Suez route. In Palestine itself, the wartime demands did not reach their peak until 1942. In that year the ton-km. rose by 50 per cent., and showed a similar increase in the next year. In 1943-44 a rise of 30 per cent. in ton-km. was recorded, after which the traffic fell back to a small degree.

Throughout the period under review, the passenger stock of the Palestine Railways was subjected to excessive use for troop movements, and serious material damage was suffered in the course of this traffic. Much of the leeway in repairs had been made good by the end of 1945-46, but even so, the condition of coach interiors remained far from satisfactory. Similar

maintenance difficulties were experienced with goods wagons, many of which deteriorated to such an extent that only the urgent necessities of war justified their retention in main-line traffic. Relatively little damage was suffered by enemy action, however, although there were several air attacks on Haifa in 1941 and 1942.

Civilian passenger services were reduced to the minimum possible during the war years. In 1942 and 1943 the only civilian facilities were the daily through trains to and from Egypt, and the connecting service on the Jaffa-Jerusalem line. An improvement was effected in May, 1944, by providing an additional train between Haifa and Lydda, and two additional trains between Jaffa and Jerusalem. Although the report does not cover the recent period of intensive sabotage against the railways, it records the worsening of the rolling stock situation by the complete destruction of 10 coaches by terrorists. Sleeping and dining cars of the Wagon Lits Company were withdrawn in August, 1942. A sleeping car was restored on March 1, 1943, and on February 1, 1945, the full dining and sleeping car facilities were reinstated. Half of the estimated compensation of £P.3,923 to the Wagon Lits Company, for the suspension of its services, has been contributed by the British Army.

In the years covered by the report there has been a surplus from all sections worked by the administration except for the Hedjaz Railway. On this section, however, the deficit showed a reduction from £P.117,420 to £P.2,721 in 1945-46. A large volume of traffic passed to and from the Palestine Railways by means of the military railway from Haifa to Beirut and Tripoli, which was opened to traffic on August 25, 1942. Except for certain passenger trains which were worked to and from Haifa by War Department crews and locomotives, all traffic was exchanged at the border station on the Ez Zeeb. Palestine railways staff operated the section between Haifa and Ez Zeeb, and payment for the traffic handled was received at the current military cost rates.

In conclusion the report records the loss sustained by the administration in January, 1946, when terrorists attacked a pay train between Beyamina and Hadera, and made off with approximately £P.35,000 (see our March 15, 1946, issue). Revised methods of payments had to be introduced as a precaution against further attempts of this kind, but these have been costly in manpower, and constituted a serious drain on members of the staff who could ill be spared from their normal duties for several days every month.

* * * *

Bogies and Pony Trucks

BOGIES and pony trucks will continue to claim the attention of engineers just as long as railways contain curved track, points, and cross-overs; and Mr. J. C. Loach, M.Sc. (Eng.), A.M.I.Loco.E., in the paper which he delivered to the Institution of Locomotive Engineers in London on October 9, rendered a good service by giving a useful general survey of the subject.

The paper was divided into two parts, devoted to bogies and pony trucks respectively. Mr. Loach classified bogies into two main divisions: (1) those in which the weight from the engine main frame is transmitted through plane surfaces of contact (either Cartazzi slides or horizontal surfaces—the latter necessitating "check" or side-control springs); and (2) those in which the weight is transmitted through links or rockers which permit lateral movement of the truck.

By means of some interesting dimensioned diagrams Mr. Loach showed how the strength of the check spring could govern the forces acting on the flanges of a 4-6-0 locomotive on a curve. Comparative diagrams for weak and strong springs showed the great importance of this factor in influencing the flange forces of the locomotive, especially those acting on the leading coupled wheels. In the example considered, for instance, the substitution of a strong for a weak side-control nevertheless reduces flange wear on the leading coupled wheels from 11·15 tons to 7·09 tons, a change which would correspondingly diminish the rate of wear of flanges for the axles concerned as well as reducing it for the other axles generally. The chief drawback of strong check springs is demonstrated, however, when an engine comes to rest on a curve having considerable superelevation. Much weight is thrown off the higher wheels, and then, on a dry rail, with the co-efficient of friction equal to (say) 0·25, the flange force will exceed the weight of the guiding wheel on the rail. The use of a strong check spring, nevertheless, reduces flange wear on the leading coupled wheels even if there is a slight increase in the flange forces on the trailing bogie wheels.

The "liveliness" of swing-link bogies was shown to be due to variations in the proportioning of the distances between the centre of the pins. These proportions also determine the magnitude of the restoring forces. Mr. Loach paid tribute to the ingenuity of the arrangement of the swing links in duplicate sets, as introduced on the former Great Northern Railway and still largely used on L.N.E.R. engines. This pattern overcomes the objection to the simple swing-link type, which gives a twist to the main frame when the bogie truck is deflected. Another centring device somewhat resembles the swing-link pattern, but involves rockers which act like links in compression. In this type the ratio of the centring force to the vertical load remains the same whatever the deflection from the central position. Mr. Loach considered that this was a very favourable feature, but did not say why he thought so.

In the discussion on this part of the paper one received the general impression that bogies were well-behaved components of the locomotive and gave little trouble in service. But it had to be remembered that the function of a leading bogie was merely to lead; and if (say by the use of too stiff check springs) it tried to do more, it was liable to impart disturbances to the whole locomotive, especially on light or indifferently laid colonial lines.

No views were offered by the author on the respective merits of the side-bearing and the centre-bearing types of bogie. In the former the weight was transmitted directly from the main frames to plane horizontal surfaces below them; in the latter the weight was applied around the centre pin. The chairman (Mr. H. Holcroft), in summing up the discussion, showed himself to be strongly in favour of the centre-bearing type. The side-bearing type, he said, came originally from France and first appeared in this country on the G.W.R. at the time when that company was studying the design of the de Glehn compounds.

Later, it spread to other British railways, and was now largely used by the L.M.S.R. Unfortunately, it had figured in a number of derailments; but Mr. Holcroft knew of no derailment involving a centre-bearing bogie in which the accident was traceable to the design, and he felt that it must be superior to the side-bearing bogie.

Pony trucks notoriously are difficult to design because they are not inherently stable. This leads at once to the kind of difficulty emphasised by the author—the prevention of the pony truck from "taking the wrong road" on, say, a 1 in 8 diamond crossing of two curves. Mr. Loach showed that in such cases the wheels might have to travel up to 4⅜ in. without guidance; hence it was vital for the centring force not to exceed the friction resisting the wheel's movement. Efforts have been made to improve matters by introducing additional frictional forces into the pony truck design, to oppose all lateral movements by the introduction of spring-loaded vertical rubbing pieces of "ferrobestos" bearing on steel. Other attempts to assist the passage of pony trucks over crossings—for example, diamond plate protectors—have been put forward by the permanent way engineers. These call for special vigilance on the part of signalmen, as their operation is not completely interlocked.

In general, opinion seemed to be that pony trucks were satisfactory up to the highest speeds, provided the track was in first-class condition. They were considered to be more susceptible than bogies to imperfections in the permanent way. Mr. Loach showed himself to be definitely in favour of compensating the vertical weight between the pony and the leading coupled wheels, but did not carry everyone with him on this point.

An interesting discussion ranged round the design of tank engines (*e.g.*, 2-6-2) with a carrying axle at each end; and the author's advice was to make both carrying axles into pony trucks so as to ensure a symmetrical arrangement suitable for running in either direction. This was good theory, but in practice we have had many designs of tank engines with "symmetrical" wheel arrangements which have been shockingly bad runners.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Inner Circle Service

London Passenger Transport Board,
55, Broadway, Westminster,
London, S.W.1. October 10

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I have read with interest Mr. L. P. Walter's further letter to you on the subject of the Inner Circle service, published in your issue of September 19.

The Board is fully alive to the necessity for informing its passengers whenever services are subject to delay due to breakdown. It will be appreciated that a breakdown such as occurred on July 2 affects the services at a large number of the Board's stations, and to give a suitable warning to all passengers likely to be affected necessarily must constitute a major operation.

Directly the nature and extent of the breakdown have been ascertained by the Control Office, all stations affected are advised, either by a special broadcasting system to the station offices, or by telephone. On receipt of the message, each stationmaster or supervisor is responsible for displaying notice boards showing the cause of the breakdown or delay, and for ensuring that the station staff advises passengers of alternative routes and means of travel.

The Board is investigating actively methods of improving still further the present means of disseminating information to passengers in cases of breakdown or delay, and an extension of the facilities available for this purpose is planned, though questions of labour and materials inevitably must affect the early completion of the work.

Yours faithfully,

J. H. BREBNER,
Chief Public Relations & Publicity Officer

Power Reverse Gears

Hampshire. October 10

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I note with satisfaction from your October 3 issue that Dr. Tuplin is not deserting us for the field of aircraft criticism, but would point out that he has ignored the analogy.

While not denying that it is possible to design a good manually-operated gear, it surely is not the correct attitude to adopt—that because we have relieved the fireman of practically none of his drudgery, we should re-impose some on his mate.

On certain sections of the Southern, many drivers have expressed a preference for a "good old wheel" reverser, after some unfortunate experiences on some "modern" steam reverse gear; but in every case, in answer to the question, "Have you ever driven an engine using the Eastern Section steam reverser?"; the reply has been in the negative. I cannot remember hearing a genuine complaint regarding Stirling's gear.

To avoid any misunderstanding, may I point out that in no instance has the Stirling gear in its original trouble-free state been fitted to a Southern Railway engine since the order for "L.I." class built by the North British Locomotive Co. Ltd. in 1926.

Yours faithfully,

OLD ASHFORDIAN

Locomotive Boiler Experiments

The Superheater Co., Ltd.,
53, Haymarket, London, S.W.1. October 13

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In reply to Mr. Arthur F. Cook's letter in your October 3 issue, with regard to the two L.N.E.R. locomotives fitted with Type "E" superheaters, the figures given for the standard and experimental boilers are corrected as follows:—

	Robinson	"E"
Superheater		
Tubes	168 at 2¼ in.	45 at 2¼ in.
Flues	32 at 5½ in.	124 at 3½ in.
Elements	32 at 1½ in. o.d.	62 at 1⅝ in. o.d.
Heating surface		
Tubes	1,880 sq. ft.	504 sq. ft.
Flues	835 sq. ft.	2,159 sq. ft.
Firebox	215 sq. ft.	215 sq. ft.
Total evaporative	2,930 sq. ft.	2,878 sq. ft.
Superheater	553 sq. ft.	1,099 sq. ft.
Total	3,483 sq. ft.	3,977 sq. ft.

The superheating surface is, as usual, calculated on the inside, or steam-touched, side.

As regards performance, Mr. Cook is correct in saying that there was little difference, but this was due to the fact that the boiler with Type "E" superheater never was used to capacity. Boilers having Type "E" superheaters allow of greater evaporating and superheating surface with a somewhat higher superheat in respect of the increased steam generated. Accordingly, we recommend Type "E" only when it is clear that a given size of boiler with standard superheater will not produce the needed quantity of steam with as high or higher degree of superheat as the Type "E." This may be observed in U.S.A., where identical locomotives, some fitted with standard-type superheaters, others with Type "E," are in service, depending on the traffic division employed.

Yours faithfully,

ERIC A. ROBINSON
Managing Director

Automatic Train Control

35B, Woodstock Road,
Oxford. October 18

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In your issue of October 17 there are two things which are both interesting and co-related. One is the account of the admirable efforts of the G.W.R. to improve the automatic train control on that system. The other is a statement made by the Inspecting Officer in his report on the accident between Grayrigg and Oxenholme, L.M.S.R.: "Automatic train control, providing an audible signal and brake application, would have prevented the collision."

It seems almost incredible that since the grouping in 1923, only one railway system out of the four has been able to provide this very essential measure. In about 1927 the L.M.S.R. was making extensive experiments with the Hudd system, and may still be doing so. But that was twenty years ago, since when there have been four Chief Mechanical Engineers and an expensive research establishment, but no sign of an A.T.C. system.

Whatever we may say or think about nationalisation, it certainly would have a job to beat this record of inability or unwillingness to institute a measure which has been strongly recommended time and again in official accident reports.

Yours faithfully,

T. LOVATT WILLIAMS

[We are informed that the L.M.S.R. A.T.C. installation on the Southend line will be in operational use shortly.—ED., *R.G.*]

Dutch Railway Problems

London & North Eastern Railway,
43, Bridge Terrace,
Doncaster. October 15

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—When visiting colleagues on the Netherlands Railways a few days ago, I was given figures for the destruction their railways suffered during the last seven months of the war. These are so striking that they will be of more than usual interest to many railwaymen in this country.

When Holland was overrun by the Nazis without any warning on May 10, 1940, the railways were little damaged. The invaders did their best to keep them in working order for the next four years. This policy was reversed after September 17, 1944, when allied airborne troops landed at Eindhoven, Nijmegen, and Arnhem. On that day the Dutch Government called for a general railway strike, and the 30,000 Dutch railwaymen went "underground" until the Nazis capitulated seven months later, on May 5, 1945.

Before the war the Dutch railway system was one of the best in Europe. The western section was almost entirely electrified, and had a world-wide reputation for good time-keeping, speed, and reliability. After the Germans had capitulated, the Dutch found that only 30 per cent. of their bridges remained, and almost all their stock had been stolen.

In tabular form, the figures I was given present the following tragic picture:—

Destroyed		Destroyed or stolen	
Bridges	70 per cent.	Diesel-electric trains	100 per cent.
Signal boxes	68 ,,	Electric trains	99 ,,
Track	62 ,,	Wagons	98 ,,
Stations	18 ,,	Carriages	94 ,,
		Locomotives	84 ,,

The Dutch have climbed courageously from that almost complete loss of rail transport, but they are obviously short of all the materials needed for railway working. They have been unable to find all that was carried off to Germany, and much of the material in use is a laboriously-made patchwork.

Yours faithfully,

T. HENRY TURNER,
Chief Chemist & Metallurgist

The Scrap Heap

"ON INNOVATIONS" BY LORD BACON

"It was good, therefore, that men in their innovations would follow the example of time itself; which indeed innovateth greatly, but quietly and by degrees scarce to be perceived. . . It is good also not to try experiments in States, except the necessity be urgent, or the utility evident, and well to beware that it be the reformation that draweth on the change, and not the desire of change that pretendeth the reformation; and lastly that the novelty, though it be not rejected, yet be held for suspect."

* * *

FORMS FOR SANDWICHES

I bought sandwiches to the value of 2s. 4d. at a large shop. As I had spent more than 2s. 3d., I was required to fill in a form, stating the number of persons who were to consume the sandwiches, and my name and address. I suggest that this wasted my time and that of the shop assistant (delaying the queue of shoppers considerably) as well as wasting paper, and that it was a useless formality unless there is enough spare labour to supply a snooper to follow me home and count the number of people eating the sandwiches. Is not this an example of bureaucracy run mad? —*Mrs. Christopher Morriss, in a letter in "The Times."*

* * *

100 YEARS AGO

From THE RAILWAY TIMES, Oct. 23, 1847

THE BANK OF ENGLAND AND RAILWAYS.

To the Editor of the Railway Times.

SIR,—That the *action* of the Bank of England has reached almost the acmé of folly, may be assumed from the opinions undisguisedly expressed by the leading journal of Europe, and some of its chief contemporaries.

The *Times* of the 2nd of October tells its admiring readers that—"Four weeks ago the Bank of England gave notice that they would make advances upon stock and Exchequer-bills at 5 per cent., being a reduction of full ½ per cent. upon the then current rate of interest in the market. Yesterday the Bank raised the rate of interest from 5 to 5½ per cent.; and this morning they announced that for the present they should discontinue advances altogether. The Bank is always the first in the field to add to the terrors of any existing crisis."

* * *

PROTECTION OF CROPS ON RUNNING LINES

A correspondent signing himself "Satirist" writes to us as follows concerning the letter on Ministry of Transport inquiry procedure published in our October 10 issue:—

SIR,—I have read your correspondent's unwarranted criticism of the inspecting officer's report on the Lichfield accident, and am in entire agreement with your remarks thereon. It was, however, unfortunate that you published in the same issue the sketch showing a temporary diversion to avoid a growing marrow, because I dread further criticism of the Ministry of Transport from the same source.

Assuming the Ministry unhappily gave provisional sanction pending inspection, the question may be asked: Why accept a set of facing points and turnout involving a speed restriction when a slight lift extending some distance on either side would enable the marrow to grow underneath the rail?

I have no doubt the usual meeting was held on the ground, when all departments were represented, and no doubt the L.D.C. and Horticultural Committee representatives pressed for the adoption of a scheme which would interfere least with the comfort of the marrow; and in all probability it was foreseen that there would be danger of injury by platelayers' beaters if it was allowed to lie among weeds between sleepers in a running line.

Another solution would have been to secure the marrow with its abdomen on the slipper of a Pinders fog machine and connect the chain to a lever in the signal box. Interlocking between this lever and the home signal lever would compel the marrow's removal from the rail for each train, but the danger of an over-run might have made it necessary to interlock it with the block and put proving contacts on the marrow.

There are two objections to this solution: first, there is the risk of abrasion to the delicate skin of the marrow and damage due to flexing the vine; and secondly, marrows soon pass from the tiny toddlers stage to the corpulent adult stage; therefore frequent adjustment of the braces would be necessary, otherwise it would struggle in the throes of strangulation.

The question of delays to traffic and additional expense, therefore, was outweighed by consideration for the marrow's safety—which only just goes to show, doesn't it?

* * *

TRAIN RUNS INTO HORSE

A horse strayed on to the L.N.E.R. line near Clapton Junction recently and the 4.37 train from Liverpool Street to Chingford collided with it and knocked it on to the up line.

The horse was injured and had to be destroyed. Meantime, trains bound for Liverpool Street were held up. It was an hour and a half before the line was cleared.—*From the "Evening Standard."*

* * *

THE BIRD ON THE ENGINE

As the 5.58 p.m. down train drew into Winchester I observed on the front platform of the locomotive what appeared to be a bunch of feathers. Obtaining permission from the driver to investigate, I retrieved a fine, fat hen pheasant, dead but still warm. I showed it to the interested driver, who was on the point of returning the bird to me, but, as the result of a remark from the fireman, retained it, saying, "My mate wants it."

Boarding the train and ruefully thinking of my lost dinner, I wondered who of the three could claim true title? Perhaps none of us could, then if so, who?—*Mr. W. Malcolm-Dickinson in a letter in "The Times."*

* * *

MISS WEST GOES NORTH

All too briefly the grey gloom of Euston Station was lifted by the presence of a radiant personage with strikingly blonde hair and a dazzling smile. Miss Mae West was on her way to Manchester for the opening of her play "Diamond Lil." A quarter of an hour before her train was due to leave Miss West swayed, the top-hatted stationmaster at her side, along the platform to her compartment. Her arrival was the signal for crowds to desert the train and clamour for autographs.

Then, in the voice Hollywood has made famous, she invited her audience to "Come around and see me in Manchester." The crowd was enchanted and some porters signified their approval of this invitation with loud whistles. Then came a more official whistle. The train started and Miss West, with the 18 men over 6 ft. tall and the 20 girls appearing with her, was carried northwards.—*From "The Manchester Guardian."*

CHINESE RAILWAY STORIES—3

By Cyril G. C. Wayne

COMPENSATION

When the line was first built the Railway offered an indemnity of $30 to the dependants of anyone who was run over and killed by the strange new "iron devils." What did the younger people do but go and make a present of $15 to their elders to go and have a good time and then come back in a fortnight or so and commit suicide—the dependents then collected the $30 and pocketed the difference. The number of people killed on the line went up to such an extent that the company was obliged to cancel the indemnity, and down went the death rate.

THE "EVER-DESPERATE RUNNER"

Perhaps the gem of the whole collection is the following written by a student of the traffic school. It is the custom for the students to be taken on the line for practical demonstrations, each student being required to write a short description of what he had seen and learnt. This student did not find enough scope for his abilities on the railway, and, after a short period of guard's work, he left the service to join one of the foreign consulates. Here is his essay:—

"To the Traffic Manager.

"By taking advantage of your choice, we were enriched in experience to have an ever-dreamed chance to visit ——. I am submitting you the report as much as we have been enjoying. Since Bacon, the English Great Philosopher, in the 'Essay of Travel,' said 'Travel in the younger sort is a part of education; in the older a part of experience,' we were by the quotation used, to take trip to the various stations, as we are all the coming staff. In order to increase our experience we have to visit all stations for future reference.

"So on the fresh morning, *i.e.*, Sept. 15, while the azure sky had been born out from the womb of darkness of yesterday, thunder, rain on the 3rd platform came to and fro the passengers including the coming staff accompanied by their instructors. They had assembled in school. Time being at hand. The ever desperate runner, Iron Horse, in a great noise of Hurrah, by taking mechanical advantage, drove the following coaches in a series like a string of thread forwarding to his aimed station violently. Along the track while the train was running we got the rural scenes from both windows outside that delighted our eyes, and the train was stopping as soon as possible. Around station we by teachers' direction we led to visit the service offices, namely: Stationmaster's Office, Telegraph Office, Booking Office, Baggage Office, Official Reception Room and Goods Depots.

"After we partook of tiffin at the nearest restaurant that well could give us a good appetite. Those up to Stationmaster down to coolies respected to their passengers and worked ever so industriously, faithfully and regularly. I dare say that if all stations along the line can be equal to the level of the —— railway henceforth will be reformed in certainty.

"While the sun was going down to sink the train No. 16 Down came on with crowds of passengers and we therefore took it back. The train arrived at 8.15 and we returned home sleeping soundly. In the midnight the Stationmaster and Guard were waving their flags still in my brain. Happy indeed.

"I am, Sir, Yours obediently, (Sgd.):"

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

INDIA & PAKISTAN

Mysore Railwaymen Strike

Workers on the Mysore State Railway went on strike on September 8. Soon after, the Bangalore City Station, where five lines converge, presented a deserted appearance, as all employees, including the sweepers, pointsmen, watchmen, and locomotive staff, struck work. About 30 senior officers, the only persons who were not on strike, managed to start a few engines and moved wagons carrying vital supplies. The M. & S.M.R. trains from Madras terminated at Bangalore Cantonment.

The strike involved 11,000 employees, and was called to support a demand for the same scales of pay as apply on Class 1 railways, together with a compensation payment of Rs.1,000. A 40 per cent. increase in wages and a special allowance of Rs.5 had been granted already by the Government of Mysore, who subsequently offered also a bonus of a month's pay. The strike was settled on October 5.

NEW SOUTH WALES

Results for First Quarter

Passenger traffic declined in the first three months of the current year compared with the period from January to March in 1946. Earnings from this source fell from £3,956,680 to £3,450,863. Merchandise receipts, however, at £3,727,503, compared with £3,375,459 in the previous year. At the same time expenditure increased by £136,400 to £6,338,132, at which figure it represented 82·69 per cent. of earnings. In the first quarter of the previous year the operating ratio was 80·18 per cent. The number of passengers carried in the three months decreased by 969,313 to 65,069,286, and the tonnage of goods traffic fell by 45,896 tons to 3,888,118 tons.

UNITED STATES

Hurricane Damage

Extensive damage was done to the main line of the Louisville & Nashville in the New Orleans area by the hurricane which struck southern Mississippi and Louisiana on September 19. Wind velocities reached 120 m.p.h. The trestle bridge across Biloxi Bay, between Ocean Springs and Biloxi, was damaged for about two-thirds of its length, as also was the bridge crossing St. Louis Bay. Over a distance of 37 miles, it is estimated that 85 per cent. of the track was shifted from its formation and turned upside down by the hurricane. Preliminary surveys have resulted in the damage being estimated to exceed $1 million, and that from 30 to 60 days will be necessary to restore normal services between Ocean Springs and New Orleans. Traffic on the Southern was less seriously affected, although this company's services into New Orleans were interrupted for about a day.

Western Pacific Signalling Appeal

Another application has been received for modification of the I.C.C. signalling order of June 17, requiring railways to instal A.T.C., cab signalling, or automatic block signalling on lines over which high-speed trains are run (see *The Railway Gazette* of September 19 and October 3). The new petition comes from the Western Pacific, which is requesting permission to operate one train daily at an authorised speed of 80 m.p.h. or more, over approximately 291 miles of its main line between Salt Lake City and Oakland. The whole of this section is protected by automatic block signals. At the present time the maximum authorised passenger train speed on the Western Pacific is 70 m.p.h., and the company maintains that if it is required to instal automatic cab signals, such installations should be made solely in locomotives to be operated at 80 m.p.h. or more.

The train which is the subject of the Western Pacific petition is the "California Zephyr," and the company states that outside the 291-mile section with automatic block signals, this service would be operated at speeds of less than 80 m.p.h.

CANADA

Claim for Higher Wages

Delegates representing 40,000 men employed in the motive power and rolling stock departments of all Canadian railways have put forward a claim for an immediate wage increase of 34 cents an hour and provision for two weeks' holiday with pay. The secretary of the union concerned has stated that the executive will open negotiations with the railways regarding the wage increase, which the union considers necessary to place Canadian railway workers in as favourable a position as men of similar grades in other branches of industry.

P.G.E. Rejects Purchase Proposal

Mr. John Hart, Premier of British Columbia, has rejected new overtures by United States interests to purchase the provincially-owned Pacific Great Eastern Railway. It was reported that American interests had offered to put up a $5,000,000 deposit as a guarantee of good faith. Mr. Hart said an American company, recently reorganised, was anxious for a discussion towards purchase of the P.G.E. or participation in its proposed $50,000,000 extension to the Peace River district (see *The Railway Gazette* of April 26, 1946, and April 18, 1947). Mr. Hart told them it was no use their proceeding, as he was going to press for a partnership between the Dominion and Provincial Governments and the two transcontinental railways. In the interests of the country, he believed that to be the proper solution.

SOUTH AFRICA

Public Relations Campaign

A plan to promote public goodwill was announced recently by Mr. W. R. F. Teichmann, a South African Railways Commissioner. Mr. Teichmann said that the railway staff was polite and courteous, but it was well to take note of what other railways were doing. It took the teamwork of a large number of Europeans and non-Europeans to run the South African Railways, and on their efforts the success of the administration depended.

Traffic was being maintained at a high level, and although this meant hard work and long hours for the majority of employees, it had the specific advantage of maintaining railway revenue. That revenue was needed today probably more than at any previous period, for, in spite of all efforts, expenditure still was rising. A few months ago another £1,200,000 a year had to be found to meet a further rise in the cost of living allowances, and this one item was now costing the railways about £10,000,000 a year, which was a formidable sum in relation to total revenue.

The average "man-in-the-street" seemed to be under the impression that since the raising of rates and fares last year, the railways must have all the revenue they needed. However, in spite of the general rise in revenue, June, 1947, already had shown a deficit of £237,980.

Rating Commission Appointed

When Mr. F. C. Sturrock, Minister of Transport, opened the conference in Ladysmith of the Natal Inland Public Bodies' Association last August, he announced his intention of appointing a commission to inquire into the effects of the present rating structure of the South African Railways, and to find out whether changes could be made (see *The Railway Gazette* of September 26).

The Minister said he had realised for some time that the Union's rating system, while achieving most remarkable results in agriculture and industrial development, might need modification in the light of the great economic changes throughout the country during the war and after. He stated that he intended appointing two industrial economists in South Africa and an expert from overseas to the commission. The commission would survey the whole field of transport objectively and impartially, and in the interests of the country as a whole.

The composition of the commission has now been announced by the Minister. Its members are:—

Sir Charles Henry Newton, Director and formerly Chief General Manager, London & North Eastern Railway.

Mr. R. G. H. Ashworth, National Secretary & Economic Adviser to the Footwear Manufacturers' Federation.

Dr. F. J. van Biljon, Under-Secretary for Agriculture, seconded to the National Marketing Council.

[Sir Charles Newton's appointment to the commission was recorded on our October 10 issue.—ED., *R.G.*]

SWITZERLAND

Schaffhausen—Romanshorn Electrification

The introduction of electric traction on the 16·1-mile section between Kreuzlingen and Stein-am-Rhein on October 4, marked the complete electrification of the 40¼-mile route between Schaffhausen and Romanshorn in North-East Switzerland. The conversion was begun in 1945, the first section, between Schaffhausen and Etzwilen, being completed in December of that year, as reported in *The Railway Gazette* of March 22, 1946. There followed the conversion of the 11·8-mile stretch between Romanshorn and Kreuzlingen (see *The Railway Gazette* of June 28, 1946). In December, 1946, electrification also was completed on the 1¾-mile section between Etzwilen and Stein-am-Rhein in connection with the Winterthur-Kreuzlingen electrification, reported in *The Railway Gazette* of December 13, 1946. In the final conversion, over 2½ miles of line had to be relaid in order to reduce curvature for the higher speeds of the electric trains (an average of 52·7 m.p.h. as compared with 46½ m.p.h. with steam working).

Electrification of the whole line, coinciding with the winter timetable, has enabled the number of trains to be increased from nine to eleven a day each way, and a further increase to twelve is envisaged for the summer period. The complete conversion between Schaffhausen and Romanshorn cost about fr. 11 million (approximately £630,000).

G.W.R. Zonal Goods Organisation—1

Division of system into 36 zones to improve transit of "smalls" traffic by concentration of handling and by motor services

Loading wagons by perambulation direct from the collection vehicle

WHEN the G.W.R. introduced in December, 1945, its first zonal collection and delivery scheme for miscellaneous goods traffic in the Birmingham area, it was realised already that the standard of service which would be required by the trading community would be on a higher level than before the war. Since that date 29 additional schemes have been brought into operation, and the whole of the G.W.R. system will be covered by the end of this month. There will, however, be six areas still to be developed in which other companies are concerned.

The purpose of zoning is to provide overnight delivery of small consignments between any two stations, even in rural areas. It is achieved by concentrating the handling of traffic at a reduced number of stations, thereby increasing the possibility of forwarding points being able to make up full wagon loads for through transit to a destination (known as a sub-railhead or railhead) from which there is a direct road delivery service to the consignee. Combined with this is the extended use of road transport for the wider collection and distribution of traffic in areas which were not served previously, and the substitution of motor transport for short distance rail haulage. A corollary of these arrangements is a substantial reduction in the volume of traffic loaded for transhipment, with a consequent speeding up in transit time.

When direct transit to a sub-railhead is impracticable, traffic is sent to the railhead station in the same zone as the sub-railhead serving the destination. It then completes its journey by a trunk motor service to the sub-railhead, and thence by direct delivery motor to the consignee. Every zone, therefore, is based on a railhead, which operates direct delivery services in its own vicinity, and also trunk motors to a number of sub-railheads. The railheads are situated at important towns or traffic centres, but the aim in operating the scheme is to by-pass them as much as possible by sending traffic direct between sub-railheads, except when transfer is unavoidable.

The trunk motor schedules from the railheads ensure that consignments loaded to them for a sub-railhead are forwarded as soon as possible after receipt, instead of waiting for an evening wagon.

Every railhead has its own direct delivery area, from which it receives and to which it delivers traffic by motor. Its trunk motors handle, primarily, consignments to and from the sub-railheads for which direct wagon conveyance has not been possible. Traffic passing between sub-railheads in the same zone also is sent by trunk motor, as well as any traffic between a sub-railhead and the direct delivery area of the railhead. The boundaries of the railhead and sub-railhead direct-delivery areas are contiguous, so that every point in the zone is served.

Trunk motors operate on fixed schedules between railhead and sub-railhead. They do not collect or deliver *en route*, this work being left to the direct-delivery motors radiating from the sub-railheads.

Geographical or industrial circumstances sometimes result in two railheads being close together. The objects of the scheme are then furthered by arranging for them to interchange traffic as required to assist in the making up of full wagon loads. Connecting road services are provided for this purpose. They are known as link services, and six are in operation, as follow: Birmingham — Wolverhampton; Bristol—Trowbridge; Llanelly—Swansea; Newton Abbot—Exeter; Slough—Paddington; and Redruth—St. Austell.

Absorbed Stations

In every zone there are numerous stations where cartage vehicles are no longer required for the collection of small consignments under the zonal scheme, since the collection and delivery services in their localities now are performed by the sub-railheads or railheads. Such stations are described as "absorbed stations." They still accept traffic brought in by the public, which is picked up for transport to the sub-railhead or railhead by the direct-delivery motors in the course of their rounds. It follows that some of the goods shed accommodation provided at such stations is no longer required, and at many places it has been let to traders.

Another effect of the zonal scheme is the diminished need for what are known on the G.W.R. as "station trucks." These are vehicles loaded with miscellaneous traffic for a certain number of stations on a prescribed route, putting out and collecting consignments as necessary in the course of the journey. Eventually it will be possible for such services to be abolished, and already many have been eliminated and others are having their schedules amended to include fewer stops. Apart from this, the scheme is bringing numerous economies in the way of reduced shunting, engine-mileage, and goods train-mileage.

The history of the zonal principle can be dated back to the 1920s, when some minor concentrations of traffic were undertaken in South Wales. The first important step taken specifically to accelerate the transit of small consignments, was the progressive reduction in the number of transhipment points on the Great Western system from 58 to a total of 9 by 1932. A transhipment point may be defined as a centre to which any station might send goods for which it was unable to provide a through wagon itself. The G.W.R. transhipment points are located at London (Paddington), Bristol, Plymouth, Newport, Cardiff, Llanelly, Birmingham, Wolverhampton, and Chester. The designation "transhipment point" is no longer used in the terminology of the zonal scheme.

Specimen Routing

Although improvements were effected by reducing the number of transhipment points, there still remained the possibility of consignments taking two or three days in transit. As an example of the routing of traffic under the pre-war scheme and the present zonal system, the following stages would be involved in moving a consignment from Windsor to Llantrisant:—

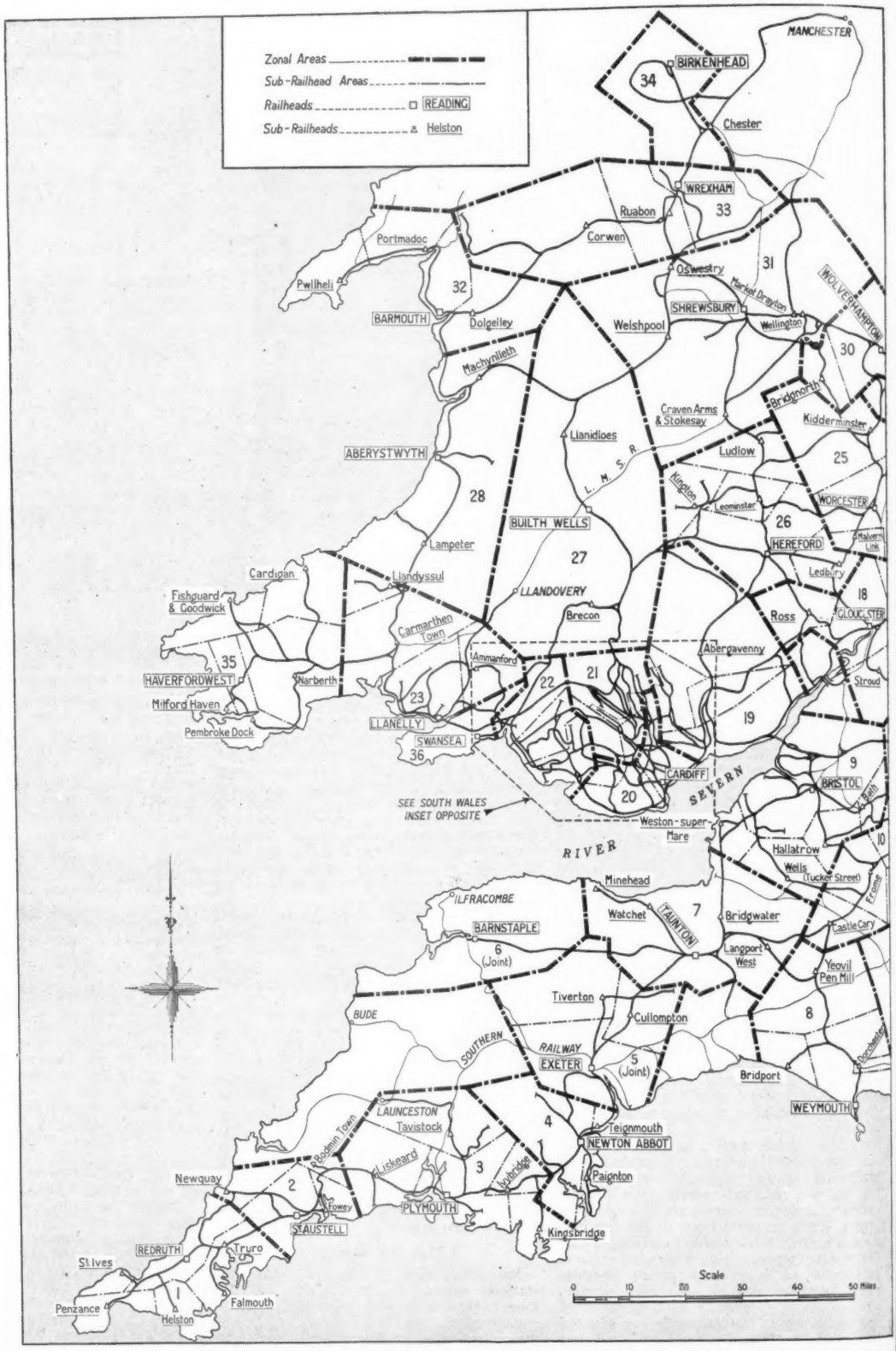
	OLD SCHEME
Windsor	to Paddington
Paddington	to Cardiff
Cardiff	to Llantrisant
	NEW SCHEME
Windsor	to Slough railhead
Slough	to Llantrisant sub-railhead direct ; or
,,	to Cardiff railhead ; and
Trunk motor	to Llantrisant

It will be seen that the old scheme would involve losing a day in transit at Paddington and Cardiff. Under the new scheme, however, the consignment would travel from Slough to Llantrisant (or Cardiff) on the night of the day on which it was collected, and would be delivered the next morning by the Llantrisant direct delivery vehicle. As an ultimate objective, the scheme envisages that every railhead will stand at least 35 wagons, destined for every other railhead on the G.W.R. system.

Certain structural modifications have been necessary at various railheads and sub-railheads in order to provide the accommodation required for additional cartage vehicles, but these, for the most part, have not been costly. Against the expenditure involved must be set the operating economies mentioned already.

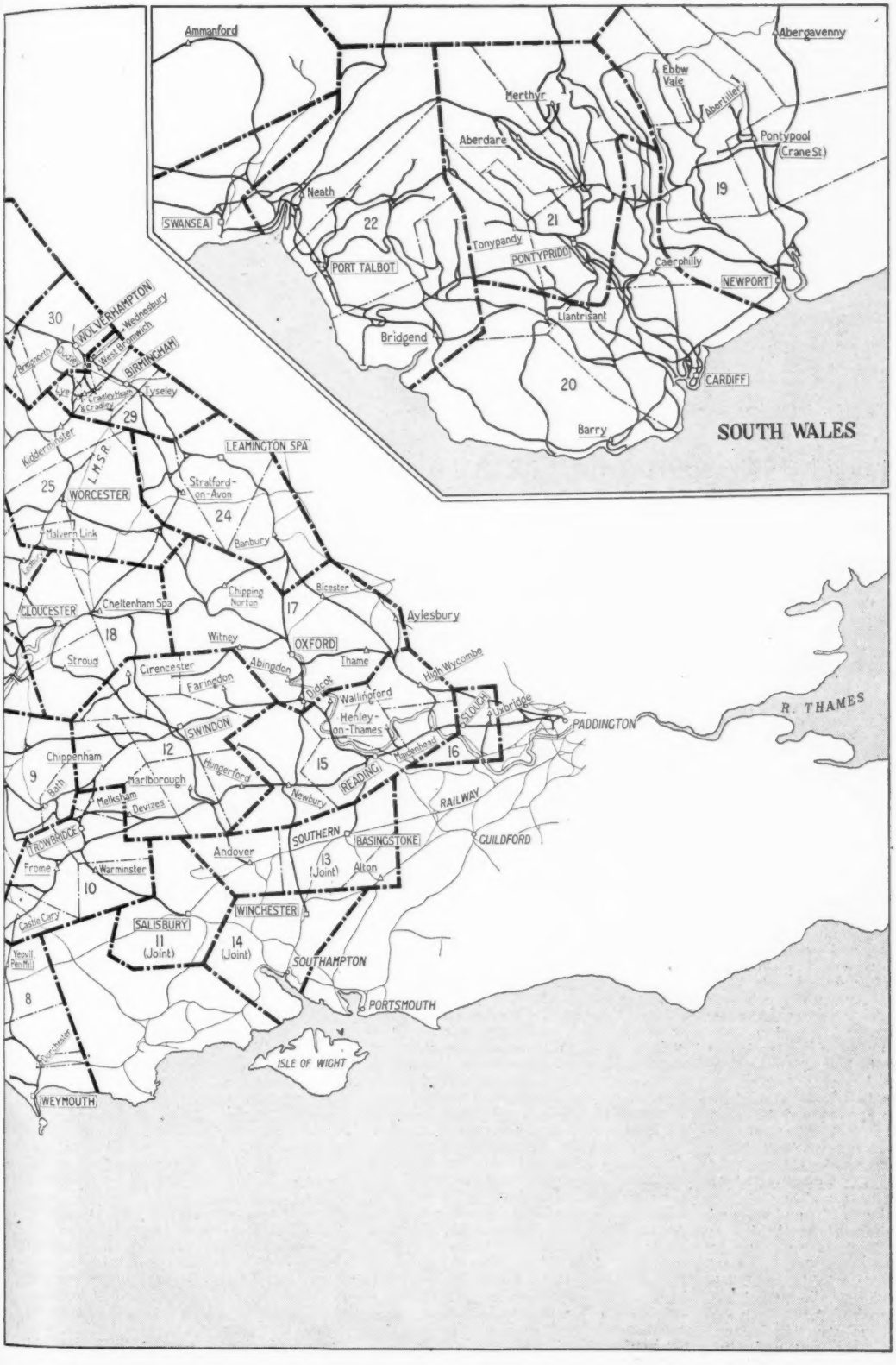
To enable many of the railheads and sub-railheads to cope with the additional volume of forwarded traffic, as a conse-

G.W.R. Zonal Goods Organisation—1



Division of system into zones, with enlarged inset of South Wales.

G.W.R. Zonal Goods Organisation—1



Some of the sub-railhead boundaries are not yet finally determined

quence of the absorption of several stations, a new method of working has been introduced widely by the G.W.R. which is known as the perambulatory system of direct loading (illustrated at the top of page 461). Instead of traffic being conveyed by sack truck to the appropriate wagon for dispatch from a road vehicle berthed against a platform, the use of a platform is dispensed with, and road vehicles travel from wagon to wagon, the traffic being distributed without intermediate handling. This is a speedier method of working and obviates much damage.

Further savings are being realised by the concentration of accountancy and invoicing work.

As a direct result of the zonal collection and delivery scheme, an organisation was introduced by the G.W.R. for improving the circulation of invoices between the forwarding and receiving stations. Various methods have been used in the past for sending invoices, among them that of placing invoices in envelopes behind the labels on wagons, which led to loss and difficulties of deciphering in wet weather. All zonal stations have now been issued with small linen wallets, in which they place their invoices. The wallets are sent to the district concentration office by specified services, which may be passenger trains, road motors, or dispatch riders. Here they are sorted into batches for sending on to the concentration office of their destination district. They are placed in large leather pouches provided with Zipp fasteners, and locks. In this way they travel down the line to the concentration offices, where their contents are re-sorted for passing on to destination, again in wallets. Since this scheme was brought into operation on January 7 this year, it has been shown to ensure complete certainty of G.W.R. invoices arriving before receipt of the goods, and a reduction in consignments arriving without invoices.

Progressive additions and renewals are being made in the company's fleet of motor vehicles in order to deal with the increased road-mileage entailed by the zonal scheme. The type of vehicle used for trunk or local delivery services varies according to the locality; the type found most useful for this class of work is the 6/8-ton or 3-ton four-wheel articulated lorry and trailer. In some districts it is found that a 5/6-ton rigid vehicle is suitable for trunk services operation, particularly as such a vehicle has a speed limit of 30 m.p.h., as against the 20 m.p.h. of a 6/8-ton articulated lorry. A batch of new Vulcan 5/6-ton lorries is illustrated.

An important aspect of the scheme is the training of staff in the correct forwarding of traffic so that the maximum possible use is made of direct rail transits between sub-railheads. Temporary loading lists have been issued showing the first and second choice of destination stations for any address, and a wall chart is available on which all the railheads and sub-railheads of the zonal areas are set out in panels drawn in their correct geographical relationship, and connected by lines showing the main G.W.R. routes in schematic form.

It has emerged already as a subsidiary advantage of the zonal arrangements that the staff takes a more direct interest in handling goods when it is known that they will be sent to destinations without transhipment.

(To be concluded)

Underground Railway Plans for Stockholm

Proposed line will link existing western and southern branches with each other and with the city centre

IN spite of predictions made as recently as 1941 that the population of Greater Stockholm would remain static at a figure of 900,000 in 1970, the population figures for the Swedish capital have shown such a sharp upwards trend of late that the figure predicted for 1970 is likely to be reached next year. This development has caused a revision of transport planning for the city. It is now regarded as possible that the population of Greater Stockholm may reach a figure of 1·3 millions, of which one million will live outside the central area proper. This fact will increase greatly the importance of the future underground railway system, on which work has begun. The plans for the railway were outlined recently in an article in *Teknisk Tidskrift*, the organ of the Swedish Institute of Civil Engineers.

In 1941, the local authorities approved the construction of an underground railway line, which will cross the town in a wide arc from west to south, and will connect certain western and southern suburban lines. The western branches will include the Nockeby and Angby lines, which later will be extended through new residential districts to Hässelby. Another future suburban line is proposed to connect with the new underground trunk line in the vicinity of the Odenplan Station, where provision is being made for the future junction. In the south, also, there will be three branch lines to feed the trunk line. Two of them, the Södertörns and Skarpnäcks lines, are not yet built, but a section of the former is under construction. The Orby line is being reconstructed to standards of the underground line.

Within the central area, the underground line will run from Tranebergs Bridge in the west, cut through the town centre at Vasagatan, cross the Norström in tunnel and the Söderström on a bridge, and link up at Slussen with the existing tunnel line section under Södermalm. Apart from the latter section, the tunnel structure is completed on a section in the west, and work is proceeding at present in the neighbourhood of Odenplan.

The railway distance between the western junction station at Alvik and the southern junction station at Johanneshov will be 6½ miles, of which 4 miles will be in tunnel. There will be 14 intermediate stations, which thus, on an average, will be less than ½ mile apart. As an average taken over the whole future system, including the suburban branches, the station distance will be just over ½ mile.

The system is being built for 8-car trains, 460 feet in length, operating at minimum intervals of 90 sec. With 40 trains an hour, the maximum line capacity is assessed at 40,000 passengers an hour in one direction. This is reckoned to satisfy the traffic demands of a suburban population of 200,000. To enable the close headways to be operated with reasonable regularity, the entire system will be self-contained and free from interference by other traffic. Train service outside the peak hours will vary with requirements; but off-peak headways on the central section probably will be not less than 4 min. On the outer branches, maximum headways of 20 min. are envisaged.

The average journey speed on the central section is likely to be 19 m.p.h.; taken over the whole system, the average speed will be 22 m.p.h. The maximum speed will be fixed at 38 m.p.h. over the tunnel section and the older suburban lines, but will be increased to 44 m.p.h. on the new suburban lines. A combination of the longest western and southern suburban branches will give a maximum distance of 22 miles, corresponding to one hour's journey.

In laying down minimum standards for gradients, curvature, and cross-sectional dimensions, account had to be taken of difficult topographical conditions. On the tunnel section the normal maximum gradient is 1 in 25; but there is a short section of 1 in 24 at Skanstulls Bridge. The minimum curve radius is, as a rule, 10 ch. in the tunnel section and 15 ch. on the branch lines, but there are exceptional cases of 5-ch. curves. The length of the platforms will be about 480 ft. The permanent way will consist of flat-bottom rails on sleepers resting in macadam ballast. Current will be supplied by means of a third rail, equipped with special protection against contact by gangers and shunters.

The underground stations will have island platforms. Stairs and escalators normally will lead from both ends of the platform to sub-surface booking halls with multiple street exits. Many of these exits will communicate directly with the insides of buildings, which in winter will afford better protection against the entry of cold air into the stations. The deepest stations will be equipped with three escalators, of which the central one will be reversible.

Consideration is being given to the introduction of cab signalling of the latest American type, as is used on the Oakland Bridge section at San Francisco. If this system is adopted, the Stockholm Underground would have the most modern signalling installation outside the United States. Careful attention is being given also to the installation of efficient telephone systems, including tunnel telephones which drivers of stranded trains could use to communicate with the nearest stations and signal boxes.

Rolling Stock

The rolling stock will consist exclusively of motor cars; all will have driving compartments at each end, which could, however, be used by the public when not needed by the driver, so that there will be no undue loss of capacity. All the axles will be motored, and the speed will remain constant.

The internal layout of the cars has been the subject of much discussion. To facilitate rapid alighting and boarding, the cars will have three double-doors and two single-leaf end doors on each side. The 48 seats will leave a good margin of standing room near the doors. By way of experiment, 20 of the first 70 cars ordered will be equipped with half the seats arranged longitudinally. This will increase the standing room without reducing the total number of seats, but the longitudinal seats will be rather less comfortable.

The first trains on the new system are expected to be in operation between Slussen and certain southern suburbs within about two years. By 1950, a section of the western approach line should be ready, but through traffic between west and south will hardly be possible before some time in 1953.

G.W.R. Zonal Goods Organisation—1

Vehicles ready to leave Tyseley sub-railhead, in the Birmingham zone, on their morning rounds

Vulcan 5/6-ton lorries, a type of vehicle found suitable for the operation of trunk services in certain districts

Routing consignments with the aid of a wall chart showing railheads and sub-railheads in their correct geographical relationship

Goods shed at Dudley altered to provide additional berthing space for zonal scheme road vehicles, and other improvements

Refugee Travel Between India and Pakistan

Exchange of populations during communal disturbances

THE disturbances which accompanied the transfer of populations between the new Dominions of India and Pakistan complicated seriously what would, in any circumstances, have been a formidable transport undertaking. At a time when it was desirable to use rolling stock and locomotives to their utmost capacity, the disturbed conditions necessitated the restriction of train services. Some railway workers were unwilling to report for duty because of the danger to their families if left alone in the riot areas, and in any case warning was issued by the Western Punjab Government that railway travel between Delhi and Lahore was unsafe because of attacks on trains. On the same day the "Frontier Mail" from Peshawar to Bombay Central arrived in New Delhi 24 hr. late after being held up and attacked by about 200 armed men during its journey.

N.W.R. Coal Difficulties

A difficulty for the North Western Railway during the disturbances was its supply of coal, which comes normally from Bihar.

Refugees with their belongings struggle for space on the outside of an evacuation train

the organised transfer of staff between India and Pakistan brought many administrative difficulties while it was in progress. The inadequacy of the transport that could be provided to meet the emergency demands of refugees is shown graphically in the illustrations reproduced above and on the opposite page.

Priority for Refugees

An article on travel conditions in the Punjab and neighbouring territories after the partition of India on August 15, appeared in our October 3 issue; and numerous news items dealing with the situation have appeared in our Overseas Railway Affairs pages during recent weeks. In the second half of August, normal train services between the two Dominions were reduced to a minimum to give priority to refugee specials. On August 24, an official For this reason, services outside the riot areas had to be cut. Eventually, it was agreed between the Railway Board and Pakistan railway officials that the N.W.R. should be supplied by sea. Right up to the third week in September the "Frontier Mail" was the only scheduled train running between Delhi and Pakistan, the rest of the railway capacity being concentrated on the exchange of refugees. At this time the N.W.R., and the Eastern Punjab Railway were carrying about 50,000 refugees by 10 special trains between Western and Eastern Punjab daily. Trains carried military escorts, and increased penalties were imposed for dereliction of duty by members of the armed forces forming such escorts.

On September 19 the Chief Commissioner of Railways, Mr. K. C. Bakhle, said in a broadcast from Delhi that from August 15 to September 8, the railways in the disturbed areas had transported about 700,000 refugees of all communities, including trans-frontier moves and dispersal from camps within India.

Rebuilding a Bologna-Florence Route

Restoration of the "Porrettana"

THE old main line between Bologna and Florence *via* Porretta and Pistoia, known as the "Porrettana," the importance of which was reduced considerably when the new double-track main line between Bologna and Prato was opened in 1931, was damaged severely when the Germans retired across the Apennines in 1944. The new line was damaged as well, and this received top priority for reconstruction, because it is shorter than the "Porrettana," and has a more convenient layout, contrasting with the narrow curves and heavy gradients of the old line. Moreover, the latter is single-track throughout except for the approach sections to the south of Bologna, and between Prato and Pistoia.

Because of the heavy destruction on the line, particularly in a number of spiral tunnels, and a layout which is unsuitable for modern traffic conditions, it even was thought that the "Porrettana" might never be reconstructed. Only the northern section, from Bologna to Sasso Marconi, a distance of 11·8 miles, rising gently from 148 ft. to 351 ft. was restored to single-line traffic at first; and so was the connecting loop between Lavine and Sasso Marconi, which was built to obviate the necessity of running trains from Milan into Bologna Station and then reversing them for the "Porrettana." This connecting loop, too, was double-track, but only one track was restored.

Despite the considerable work and expenditure involved in rebuilding the old line, where several sections have to be replaced entirely, it has been decided to undertake the work, and the first section, southwards from Sasso Marconi to Porretta Terme, was reopened to traffic on October 8. The layout of this new section, a distance of 25 miles, has been altered completely compared with its pre-war alignment, and it might be described more accurately as a new rather than a reconstructed stretch.

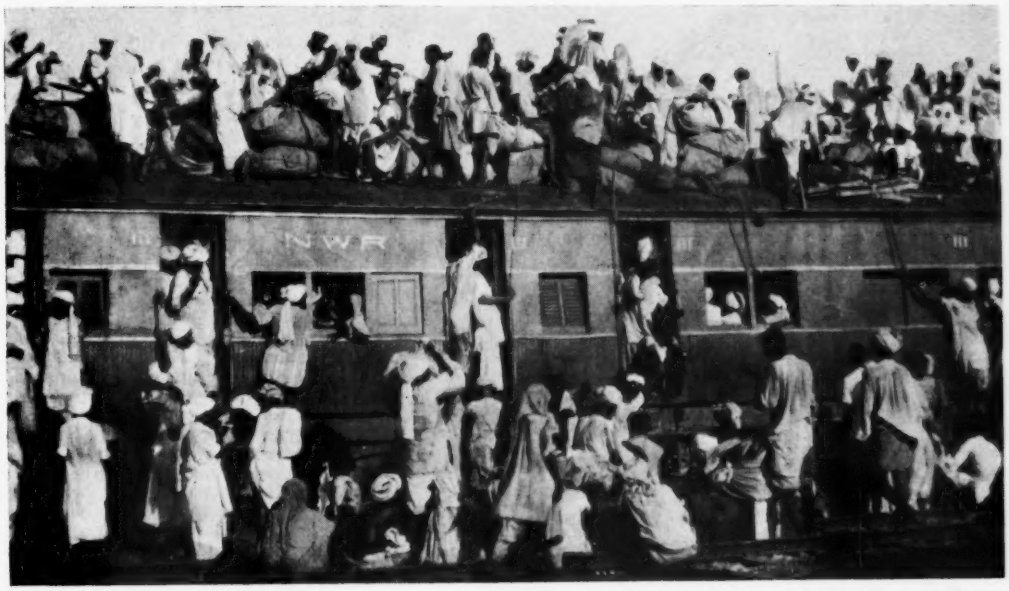
From Sasso Marconi the line rises to an altitude of 1,155 ft. at Porretta Terme, the temporary terminus. The summit of the old line was at Pracchia Station (9·3 miles south of Porretta Terme), at an altitude of 2,217 ft., as compared with the maximum altitude of 1,037 ft. on the new trans-Apennine line. The new line shortened the distance between Bologna and Florence to 60·3 miles, as compared with 82·6 miles *via* the "Porrettana," but the double-track section between Florence and Prato (9·9 miles) is common to both.

Pending completion of the rehabilitation work, double-track working on the new line has been restored only between Florence Main Station and Florence Rifredi Station, a distance of 1·2 miles.

NATAL-ZULULAND RAILWAY LIMITED.—At an extraordinary general meeting on October 7 a special resolution was passed to the effect that the company be wound up voluntarily, and that Mr. D. A. Donelan, Chartered Secretary, of 5, Fenchurch Street, London, E.C.3, be appointed liquidator.

A Moslem Refugee Train to Pakistan

(*See article opposite*)



Crowds of Moslem refugees struggling for accommodation on a train from the New Delhi area to Pakistan during the exchange of populations that followed on the partition of India into two Dominions

Unable to find a place in or on the coaches, some of the refugees make use of every inch of space available on the locomotive. It was when trains travelling in these conditions were attacked in the disturbed areas that the very heavy casualties among refugees were sustained

The Roer Railway Bridge at Düren, Germany

This bridge has a single 256-ft. double-line through span of unorthodox design, in which the trusses and decking form a triangle in cross-section

Photo] [*C. Carty*

THE main line in the British Zone of Germany, connecting Cologne with Aachen, on the Belgian frontier, crosses the River Roer just to the west of Düren. When the bridge carrying the line over the river was reconstructed in 1930, the opportunity was taken of using an entirely new and unorthodox type of through truss span to bridge the 250-ft. opening at this point.

The cross-section of this span, instead of being rectangular as usual, was triangular, its two side trusses being inclined inwards and united to form a single top boom; its general dimensions were: length, 256 ft.; height—measured vertically from bearings to top of top boom—47 ft. 7 in.; and width at base between centres of bearings, 44 ft. 3½ in. Each truss was of the simple Warren type with no verticals, and its panels or bays measured about 44 ft. This was the first instance of the use of this particular design of span for a double-line railway bridge, but it has been used subsequently to a limited extent in Poland and Germany.

During the war a Polish engineer introduced this type of construction into the United States as a military bridge in 1943, known as the V-type. This was described briefly in an article on military bridges published in *The Railway Gazette* of May 18, 1945, and also was dealt with in greater detail in a subsequent brochure entitled "Standard Military Railway Bridges."*

Pros and Cons of the Design

The principal advantages claimed for this general design of bridge-span are threefold: namely, (1) as compared with a rectangular-section span of the same length there is a considerable saving in weight of steelwork required, especially in spans of 250-ft. length and upwards; (2) it is more rigid; and (3) a greater proportion of the fabrication can be completed in a workshop, leaving less to be done in the field.

On the other hand, it may be argued that this type of span necessitates the building of wider piers and abutments to accommodate its bearings, which in the Roer Bridge are spaced 44 ft. apart. Also, when in the form of a double-line through span, its length is limited for economical use to about 200 ft. and over, due to the requirements of structural clearances to allow of the running of locomotives and rolling stock. Shorter through single-line spans in the military modification of the design have outwardly- instead of inwardly-inclined trusses, it may be remembered.

The superstructure of the Roer Bridge, as reconstructed in 1930, was erected on staging, and the units were placed in position with the aid of two triangular-frame derricks enveloping the trusses. During the war it suffered the fate of other bridges in that area and has been reconstructed subsequently, presumably to the 1930 design, as may be seen from the accompanying illustration; the photograph was taken when the recently-reconstructed span was nearly ready for traffic to be rediverted over it.

* Published by *The Railway Gazette*, 33, Tothill Street, Westminster, S.W.1. Price 5s.

Extremes Pass on the G.W.R.

Up Hereford express hauled by G.W.R. 4-6-0 locomotive No. 7005, "Lamphey Castle," passing a 2-8-0 "Austerity" locomotive at Ealing Broadway, with an L.P.T.B. Central Line train in the background

Photo] [*G. J. Jefferson*

Electric Traction Equipment for Holland

Motors, resilient gears, and pantographs supplied to the Netherlands Railways Company by the Metropolitan-Vickers Electrical Co. Ltd.

IN connection with the post-war rehabilitation of the Netherlands Railways, the Metropolitan-Vickers Electrical Co. Ltd. has received a contract from the Netherlands Railways Company for the supply of traction motors, gears, and pantographs for high-speed motorcoach stock.

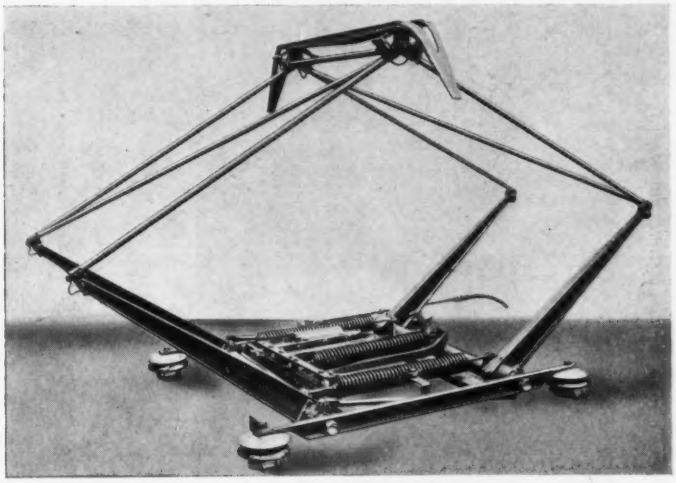
The motors, rated at 235 h.p. on the 1-hr. rating, are of the normal box-frame axle-hung type. They are self-ventilated, air being drawn from inside the coaches through flexible ducting attached to the motor air inlet openings. The line voltage is 1,350, and the motors are connected permanently in pairs in series; thus each motor, though insulated for 1,500 volts, has only 675 volts across its terminals. Field-weakening for speed control is obtained by tappings. An unusual feature of the mechanical design of the motors is that they can accommodate axle bearings of either the sleeve or the roller type.

The gears, 556 sets of which are being supplied, will have a ratio of 22:57, and will be of the resilient type, in which a hardened and ground pinion engages with a resilient gearwheel. The construction is shown in the illustrations below. It will be seen that the gear rim has inward-projecting lugs, which house Silentbloc resilient rubber units. The gearwheel centre and the rim are located with respect to one another by accurately ground steel pins, which are pressed through the holes in the arms of the gearwheel centre and through the centre holes of the Silentblocs. A clearance is provided between the extremities of the centre arms and the inside of the gearwheel rim. With this arrangement, all loads transmitted between the gearwheel and axle must pass through the resilient units.

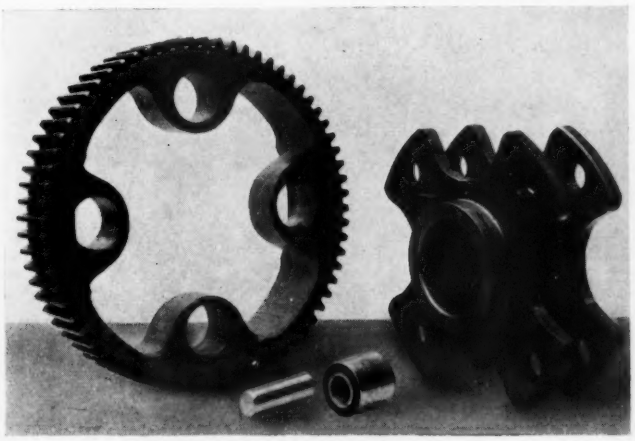
The current collectors are single-shoe pantographs, having an operating height range of approximately 8 ft., and equipped with carbon contact strips. The single collector shoe has a contact pressure of 16 lb., which is constant throughout the whole of the height range. The collector shoe is supported by a spring-and-link system, which allows a little vertical movement independently of the main pantograph structure; this enables continuous contact to be maintained when sudden changes occur in the height of the overhead wire.

The operation of the pantographs is controlled so that when air is admitted to the cylinder it rises slowly, and makes contact with the overhead wire without bounce. Also, when the pantograph is being lowered, it falls rapidly at first and then slows down, eventually reaching the closed position without impact.

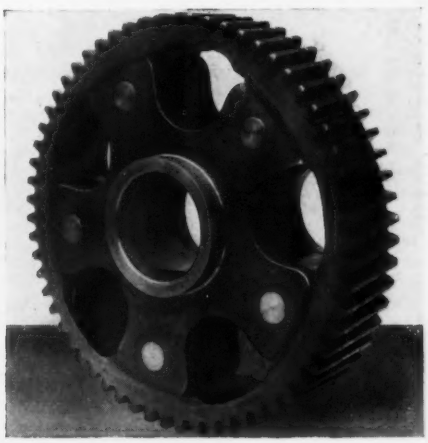
Although the pantograph structure is rigid and strong, the weight of the moving parts is very low, permitting a high upward acceleration, which allows continuous contact to be maintained with an overhead wire of rapidly varying height.



Air-operated pantograph with constant contact pressure mechanism



Components of resilient gearwheel



The gearwheel assembled

DAILY WEATHER FORECAST FOR G.W.R.—Beginning on November 1, the G.W.R. will receive a special 24-hr. weather forecast for distribution throughout its system, including its South Wales docks, at 9 a.m. every day (see also our October 17 issue). This will enable fogmen and de-icing gangs to be detailed for duty in good time if necessary, and for snow ploughs to be put in readiness if and where heavy falls are expected. The company has 33 snow ploughs stationed at strategic places throughout its system, and steamlances, for de-icing frozen points, are now available at some 200 of its main signal boxes. Some 2,000 tons of salt have been distributed for this purpose. The distribution of about 300,000 fog signal detonators to 2,000 signal boxes has been completed, and 5,000 fog signalmen will be "on call" day and night. The G.W.R. automatic train control has been installed throughout the system. In the London area an emergency fog service of trains has been arranged which can be brought into operation very quickly. This ensures a service—if restricted—for business people travelling between suburban stations and Paddington. Arrangements have been made also with the G.P.O. whereby intending passengers, by ringing their exchange, can ascertain before their journey if a fog service is in operation.

Motive Power in Palestine

(The Palestine Railways in the war years are the subject of an editorial article this week)

A 4-6-0 *of class "P" built by the North British Locomotive Co. Ltd. in* 1935, *on a Kantara train at Rehovot*

One of the American-built Baldwin 4-6-0s *of Class "H" (dating from* 1918) *at Rehovot*

A German-built 2-8-2 *of the Hedjaz Railway at Affula*

Hedjaz Railway locomotive No. 100 *at Haifa*

Photos [*D. G. Mackenzie*

RAILWAY NEWS SECTION

PERSONAL

Docks & Inland Waterways Executive

The Minister of Transport has announced that the following have accepted his invitation, made after consultation with the British Transport Commission, to become members of the Docks & Inland Waterways Executive:—

Chairman

Sir Reginald Hill (a Deputy Secretary, Ministry of Transport).

Full-Time Members

Mr. Robert Davidson (General Manager & Engineer, Leeds & Liverpool Canal Company).

Mr. John Donovan (National Secretary, Docks Group, Transport & General Workers' Union).

Sir Robert Letch (Chairman, National Association of Port Employers, and Joint Chairman, National Joint Council for the Port Transport Industry).

Part-Time Members

Mr. George Cadbury (President, Canal Carriers' Association).

Sir Hector McNeill (Regional Port Director, Scotland, 1945-46).

Sir Ernest Murrant (President, Chamber of Shipping).

British Transport Commission

The British Transport Commission has appointed Mr. H. A. Chapman, formerly Assistant Solicitor, L.M.S.R., to be Assistant Solicitor to the Commission, and Mr. W. A. J. Clark, formerly Assistant Solicitor (General), L.P.T.B., to be Parliamentary Assistant Solicitor to the Commission.

Railway Executive

The Minister of Transport announces that Sir Wilfrid Ayre has accepted his invitation, made after consultation with the British Transport Commission, to become a Member, on a part-time basis, of the Railway Executive. Sir Wilfrid Ayre is Chairman & Managing Director of the Burntisland Shipbuilding Co. Ltd., on the boards of several other shipbuilding companies, and Vice-President, Shipbuilding Employers' Federation.

L.N.E.R. Appointments

Consequent on the appointments of Mr. V. M. Barrington-Ward and Mr. J. C. L. Train to membership of the Railway Executive, the L.N.E.R. announces the appointments of Mr. C. K. Bird, Goods Manager (Southern Area), as Acting Divisional General Manager (Southern Area), and Mr. G. B. Barton, Assistant Chief Engineer, as Acting Chief Engineer.

We regret to record the death, on October 22, at the age of 74, of Mr. George L. Boag, who was General Manager of the Great Southern of Spain Railway from 1913 until his retirement in 1936. Mr. Boag had been latterly for a period on the editorial staff of *The Railway Gazette*.

Sir Gilmour Jenkins, K.B.E., C.B., M.C., who has been appointed Permanent Secretary of the Ministry of Transport, from October 20, was born on July 18, 1894, and was educated at Rutlish School and London University. He served during the war of 1914-18 with the Royal Garrison Artillery, and was awarded the M.C. and Bar. He entered the Board of Trade in 1919, and became an Assistant Secretary in 1934. He was Government Delegate to the Maritime Sessions of the International Labour Conference at Geneva, 1935 and 1936, and at Copenhagen, 1945. He was appointed a Principal Assistant Secretary, Board of Trade, in 1937, and became Second Secretary, Ministry of Shipping, in 1939. Sir Gilmour Jenkins, who was made a K.B.E. in 1944, was a Deputy Director-General of the Ministry of War Transport from 1941 to 1946, and has since been Joint Permanent Under Secretary of State at the Foreign Office in charge of the German Section, which position he relinquishes on his present appointment.

Sir Gilmour Jenkins

Appointed Permanent Secretary of the Ministry of Transport

Mr. Heaton Nicholls, High Commissioner for South Africa in London, is retiring shortly from that office.

We regret to record the death at Montreal on October 1 of Mr. W. R. Patterson, who retired in December, 1946, from the position of Assistant Comptroller, Canadian Pacific Railway.

Mr. James Maxwell, General Manager of Thos. Cook & Son, Ltd., left England recently for Cairo, where he will stay for some weeks.

Mr. G. B. Howden, General Manager, Great Northern (Ireland) and Belfast & County Down Railways, has been elected Chairman of the Managers' Conference, Irish Railway Clearing House, for 1948.

Mr. W. G. W. Reid, General Manager, Madras & Southern Mahratta Railway, on return from leave has resumed duty from October 6.

The Honorary Freedom of the City of Birmingham has been conferred on General Sir William Slim, a member of the Railway Executive.

The British Electricity Authority has appointed as Secretary Mr. H. F. Carpenter, who for nine years has been Clerk & Manager, West Midlands Joint Electricity Authority.

We regret to record the death on October 17, in his 82nd year, of Mr. William Sandford Poole, who retired in 1945 from the Chairmanship, and from the board, of the Midland Railway Co. of Western Australia Ltd.

Mr. John W. Vaughan, O.B.E., Secretary of the Locomotive Manufacturers' Association of Great Britain, has been appointed Director of the Association, and will also act as Secretary of the Internal Combustion Group which has been formed by the Locomotive Manufacturers Association to cover locomotives and railcars powered by any type of internal combustion engine.

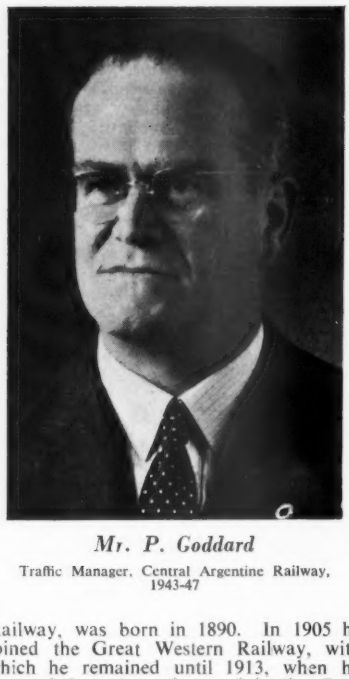
The King has awarded the Imperial Service Medal to twelve employees of the Department of Railways, and to six employees of the Department of Road Transport & Tramways, New South Wales; also to one employee of the Gold Coast Government Railway and to one employee of the Ceylon Government Railway.

Mr. J. W. Womar has been appointed a Director of B.E.T. Omnibus Services Limited.

Mr. Francis B. Lowry, M.Inst.T., who, as recorded in our September 26 issue, has been appointed General Manager of the Buenos Ayres & Pacific Railway, was born at Derby in 1894, and received his training with the Midland Railway. On the outbreak of war in 1914 he was commissioned in the Royal Engineers; and he served in France, Salonika, and with the Black Sea Force. On demobilisation he was appointed Traffic Manager of the Anatolian Railway, with headquarters in Constantinople. In 1923 he became Traffic Manager of the Ottoman Railway; he was subsequently appointed Assistant General Manager of that railway and, after it had

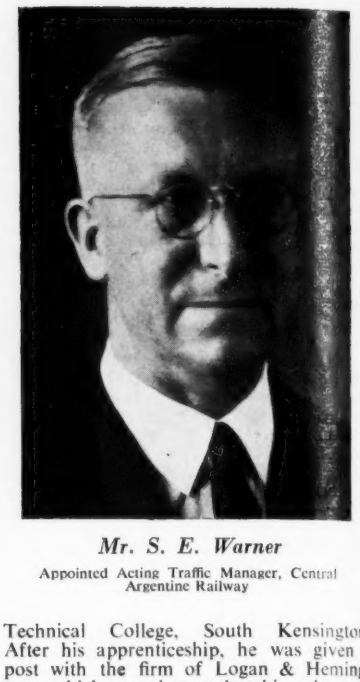
Mr. F. B. Lowry

Appointed General Manager, Buenos Ayres & Pacific Railway



Mr. P. Goddard

Traffic Manager, Central Argentine Railway, 1943-47



Mr. S. E. Warner

Appointed Acting Traffic Manager, Central Argentine Railway

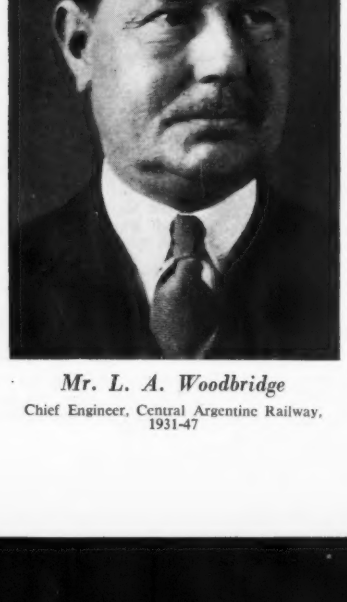
been acquired by the Turkish Government, he proceeded to Argentina, in 1936, and joined the Buenos Ayres & Pacific Railway. Mr. Lowry occupied successive positions of responsibility in the Traffic Department, eventually becoming Chief of Transport, which post he has relinquished to take up his present appointment.

Mr. Percy Goddard, M.Inst.T., who has retired from the position of Traffic Manager, Central Argentine Railway, joined that railway over 40 years ago. He was appointed District Traffic Superintendent, Retiro (Buenos Aires), in 1922; two years later was made General Traffic Controller at Rosario; and in 1926 became Assistant Traffic Manager, with headquarters in that city. Mr. Goddard was appointed Traffic Manager in 1943.

Mr. Stanley Edward Warner, A.M.Inst.T., who has been appointed Acting Traffic Manager, Central Argentine Railway, was born in 1890. In 1905 he joined the Great Western Railway, with which he remained until 1913, when he proceeded to Argentina to join the Central Argentine Railway. He was posted to the Traffic Department, but in 1914 returned to England and joined the Army (King Edward's Horse). Returning to Argentina in 1919, he became Traffic Inspector at San Antonio and other points. He was appointed Chief of Staff of the Traffic Department in 1929. Ten years later Mr. Warner was promoted to be an Assistant to the Traffic Manager, and in 1943 was made General Assistant. He has now been appointed Assistant Traffic Manager and Acting Traffic Manager.

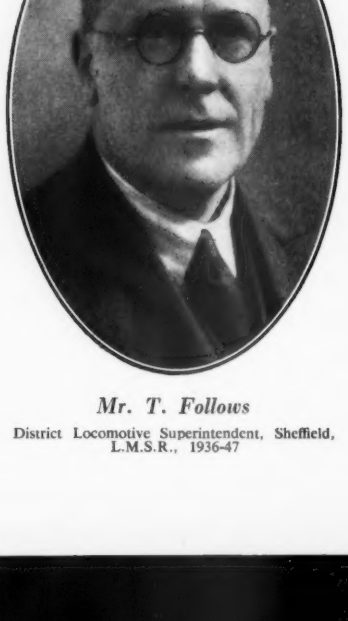
Mr. Lewis A. Woodbridge, M.I.C.E., who has retired from the position of Chief Engineer, Central Argentine Railway, was educated at Westminster College, and from 1903 took a three year course of civil engineering at the City & Guilds Central Technical College, South Kensington. After his apprenticeship, he was given a post with the firm of Logan & Hemingway, which was then undertaking the construction of the Doncaster circuit of the Great Central Railway. In 1908 he joined the Railway & Works Company, and proceeded to Peru to assist in the construction of the North Eastern Railway there. Four years later he became Engineer in charge of the construction of the Baquedano section of the Chilian Northern Railway for the firm of Macdonald, Gibbs & MacDougall. Mr. Woodbridge was appointed Sub-Manager of the Chilean Transandine Railway in March, 1914, and in 1929 became General Manager of the joint administration of the Argentine and Chilean Transandine Railways, which he left in 1931 to become Chief Engineer of the Central Argentine Railway.

Mr. J. H. Taylor, M.I.C.E., who has been appointed Chief Engineer, Central Argen-



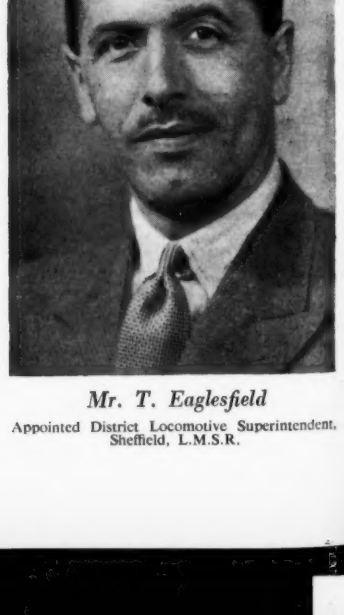
Mr. L. A. Woodbridge

Chief Engineer, Central Argentine Railway, 1931-47



Mr. T. Follows

District Locomotive Superintendent, Sheffield, L.M.S.R., 1936-47



Mr. T. Eaglesfield

Appointed District Locomotive Superintendent, Sheffield, L.M.S.R.

tine Railway, joined that railway in 1913 as a Junior Assistant Engineer, and became Chief of the Technical Office three years later. He subsequently occupied other posts of increasing responsibility, and in 1936 became Principal Assistant to the Chief Engineer.

Mr. T. Follows, who has retired from the position of District Locomotive Superintendent, Sheffield, L.M.S.R., joined the Midland Railway as an apprentice at Toton, and was transferred to Derby in 1912. There he remained for seven years before proceeding to Peterborough, and in 1922 he was transferred to Birmingham. In 1926 he was appointed to the personal staff of Mr. J. E. Anderson, then Superintendent of Motive Power, L.M.S.R. Mr. Follows was promoted to be District Locomotive Superintendent at Swansea in 1933; during his tenure of office at Swansea the Abergavenny area was added to that district in April, and the Shrewsbury area in October, 1934. He was appointed to the corresponding post at Sheffield in 1936.

Mr. T. Eaglesfield, Assistant to Divisional Superintendent of Operation, Crewe, L.M.S.R., who, as recorded in our October 10 issue, has been appointed District Locomotive Superintendent, Sheffield, is the son of Mr. Thomas Eaglesfield, who retired from the position of District Locomotive Superintendent, Hasland, Midland Railway, in 1922. He was educated at Chesterfield Grammar School and at Derby Technical College, and entered the service of the Midland Railway as a privileged apprentice at Hasland in 1921. In 1922 he was transferred to Derby in the Chief Mechanical Engineer's Department. In 1927 Mr. Eaglesfield was appointed Fitter-in-Charge at Keighley, and in 1928, Running Shed Foreman, Abergavenny. He became Running Shed Foreman, Crewe North, in 1933, and Assistant District Locomotive Superintendent, Camden, in 1938. He was appointed Assistant to Divisional Superintendent of Operation, Crewe, in 1943.

Mr. Vivian T. Norman has been elected to the board of the Coventry Gauge & Tool Co. Ltd. as Director & Commercial Manager. Mr. Norman has been Chief Accountant of the company since 1936.

Mr. N. McK. Jesper, Chief of Police (Southern Area), London & North Eastern Railway, writes with reference to the biographical details of Mr. W. H. Salkield given in our issue of October 10, on his appointment to the General Managership of the Gold Coast Government Railway, expressing his pleasure at Mr. Salkield's promotion, and that of many of Mr. Salkield's former colleagues in the L.N.E.R. In wishing Mr. Salkield all happiness and success in the office he has assumed, Mr. Jesper also pays tribute to Mrs. Salkield for the part she played in the social life of Freetown, Sierra Leone.

Mr. H. R. Caulfield Giles (Traffic Manager, New on, Chambers & Co. Ltd.) has been re-elected to the Chairmanship of the Traders' Traffic Conference for the eighth successive year; the other officers elected at the recent council meeting were: Vice-Chairman, Mr. H. Currington (Sheepbridge Coal & Iron Co. Ltd., Chesterfield); Honorary Treasurer, Mr. J. Allsopp (Staveley Coal & Iron Co. Ltd., Chesterfield); Honorary Auditor, Mr. F. E. Jones (Chance & Hunt, Limited, Birmingham). Mr. Caulfield Giles has also recently been re-elected Chairman of the Sheffield Centre of the Institute of Transport, and Chairman of the Traders' Road Transport Association, Yorkshire (Sheffield) Area.

A gathering was held at the Savoy Hotel, London, on October 16, to say farewell to Mr. H. E. T. Vogel, Chief Technical Assistant to General Manager, Leopoldina Railway, who left for Brazil on October 18 after a period of leave in this country. A representative body of his friends and business associates was present, and congratulations were expressed on his 41 years' service with the Leopoldina Railway and appreciation was recorded of the work he has done in the interest of his company and the furtherance of British interests abroad. The following were present, in addition to Mr. Vogel:—

Messrs. L. Alexander, M. A. Crane, F. Ellis, I. H. G. Gilbert, H. Gresham, J. Gresham, L. Hawkins, A. Henderson, H. A. A. Hicks, R. Lee, B. Marks, D. Menzies, H. E. Pearce, S. Potter, C. W. Schacker, G. H. Watts, W. Cyril Williams.

Mr. W. D. Neil, General Manager, Communications Department, Canadian Pacific Railway, presided as Chairman at the recent convention at Miami, Florida, of the Association of American Railroads Communications Section. Mr. Neil is the first Canadian to be Chairman at one of the section's conventions held in the U.S.A.

L.N.E.R. Staff Changes

Dr. R. F. MacKenzie, Assistant Medical Officer, North Eastern & Scottish Areas, to be Medical Officer, North Eastern & Scottish Areas, in succession to Dr. J. D. Gunn, retired.

Mr. K. A. Kindon, Assistant London City Manager, to be London Suburban District Goods Manager, in place of Mr. H. M. Collings, retiring on October 31.

Mr. H. W. Graham, Assistant District Goods Manager, Leeds, to be District Goods & Passenger Manager, Lincoln.

Mr. O. R. Smart, Assistant District Goods Manager, Middlesbrough, to be Assistant Mineral Manager (Southern Area).

Mr. G. Clark, Assistant to District Goods Manager, Sheffield, to be Assistant District Goods Manager, Sheffield.

Mr. H. T. Bird, District Engineer, Boston, to be District Engineer, Peterborough.

Mr. E. A. J. Bilham, District Engineer, Leeds, to be District Engineer, Guide Bridge.

Mr. A. F. Wigram, Chief Assistant (Signals), Chief Engineer's Office, to be Assistant to Engineer (Signals), Edinburgh.

Mr. E. A. W. Gadd, District Estate Agent, to be Surveyor, Rating Surveyor's Office, Liverpool Street.

Mr. G. D. Lloyd, Engineering Assistant, Office of Chief Engineer for Docks, to be District Engineer for Docks, Hull.

Mr. N. K. Dickie, Assistant Engineer for Docks, Hull, to be District Engineer for Docks, Grimsby & Immingham.

Mr. S. Winpenny, Acting Assistant District Engineer for Docks, West Hartlepool & Middlesbrough, to be District Engineer for Docks, West Hartlepool & Middlesbrough.

Mr. J. R. Witty, Engineering Assistant, Office of Chief Engineer for Docks, to be Assistant District Engineer for Docks, Hull.

Mr. E. Graham, Engineering Assistant, Office of Chief Engineer for Docks, to be Assistant District Engineer for Docks, Grimsby & Immingham.

Institute of Transport Examinations

The following are among those who have passed Institute of Transport examinations for 1947:—

Associate Membership, parts 1 *and* 2: Messrs. J. H. C. Brennan (G.W.R.); W. Burns (L.N.E.R.); S. C. Button (G.W.R.); L. E. Carpenter (Southern Railway); M. Coetzee (South African Railways & Harbours); C. W. Leverett (Palestine Railways); F. D. Murray (Irish Transport Company); G. Musk (Canadian Pacific Railway); E. B. E. S. Richards (South African Railways & Harbours); J. A. Sanderson (L.N.E.R.); W. H. Stebbings (passed with honours) (G.W.R.).

Associate Membership, part 1: Messrs. A. E. Cooper (Railway Clearing House); R. I. Crowl (Ministry of Transport); D. A. Davies (G.W.R.); W. S. Davies (G.W.R.); H. J. Fergusson (L.P.T.B.); A. A. Fullalove (South African Railways & Harbours); D. A. F. MacGregor (G.W.R.); D. C. Maxwell (Southern Railway); L. Meijer (South African Railways & Harbours); R. B. Morris (G.W.R.); T. W. Pascoe (Southern Railway); L. J. Trickey (L.P.T.B.); H. F. Wilkins (L.M.S.R.).

Associate Membership, part 2: Messrs. T. Barraclough (L.N.E.R.); G. S. Buckley (East Indian Railway); S. S. Franklin (South African Railways & Harbours); R. S. Goodhind (L.N.E.R.); A. Hussain (North Western Railway, India); H. P. Liyanage (Ceylon Government Railway); W. Purdom (L.N.E.R.).

Graduateship, parts 1 *and* 2: Messrs. D. J. Atkins (Southern Railway); E. M. Baldock (Southern Railway); W. Blacklock (G.W.R.); W. S. Booth (L.M.S.R.); N. A. Brampton (L.M.S.R.); F. J. Burge (L.M.S.R.); R. Campbell (L.M.S.R.); A. C. Coging (Ministry of Transport); A. Crerar (South African Railways & Harbours); R. I. Crowl (Ministry of Transport); J. D. Culverwell (L.M.S.R.); J. T. Davies (Ministry of Transport); K. J. Deacon (G.W.R.); G. M. Doel (Palestine Railways); G. C. Edmunds (L.M.S.R.); L. R. Everett (Southern Railway); I. S. Fernando (Ceylon Government Railway); J. T. Gould (L.M.S.R.); D. Gover (Southern Railway); W. J. Gray (L.M.S.R.); L. J. Green (South African Railways & Harbours); J. E. Hainsworth (South African Railways & Harbours); D. J. Hasell (L.M.S.R.); T. G. Hewitt (L.M.S.R.); A. Hussain (North Western Railway, India); K. J. Lee (L.N.E.R.); J. Liddell (L.N.E.R.); A. H. Lotz (South African Railways & Harbours); A. E. Loyd (Southern Railway); T. J. McCoy (L.N.E.R.); D. F. Mansell (L.M.S.R.); J. B. Mason (South African Railways & Harbours); B. M. Maxwell-Hart (Southern Railway); A. C. Moody (L.M.S.R.); E. Moverley (Buenos Aires Great Southern Railway); M. K. Mukerji (East Indian Railway); N. E. Norman (Nyasaland Railways); R. E. Parsloe (L.M.S.R.); C. W. Potgieter (South African Railways & Harbours); D. H. Price (South African Railways & Harbours); M. D. Rodrigo (Ceylon Government Railway); R. V. Rupesinghe (Ceylon Government Railway); H. Samuel (L.N.E.R.); E. H. Sanderson-Smith (South African Railways & Harbours); A. G. Serpanchy (Ceylon Government Railway); C. T. Simpkins (G.W.R.); C. Sivagnanam (Ceylon Government Railway); K. Smith (L.M.S.R.); R. Spink (L.M.S.R.); C. D. Stabler (L.N.E.R.); J. N. Swanepoel (South African Railways & Harbours); Miss J. P. Thatcher (Ministry of Transport); Messrs. E. N. Toplis (L.M.S.R.); S. N. Warner (South African Railways & Harbours); H. D. Welch (L.M.S.R.).

Problems Facing the British Transport Commission

Mr. Roger Sewill on slower administration and future staffing difficulties

Mr. Roger W. Sewill, M.A., M.Inst.T., Director of the Road Haulage Association and Chairman (Road Side) of the Road & Rail Central Conference, at the annual dinner of the Hull Centre of the Institute of Transport, on October 14, said that now that the Transport Act was on the Statute Book, a breathing space was given for consideration of one or two of the changes which that Act was likely to make, not only in the transport industry, but in the organisation of trade and industry of the country as a whole.

The first question about the new State organisation was whether it would work. One possible answer was that it had to be made to work, because the results of a complete breakdown in transport would be too devastating to contemplate. His own opinion was that the scheme, cumbersome though it might be, could be made to work, largely for one reason. The Commission was fortunate in being able to secure the whole of its staff from among persons trained in the hard school of free enterprise, and with the background and long experience of the practical working of transport. These realised that the future of the country depended on the transport system not breaking down, and they would undoubtedly show the same devotion to duty as they had shown in serving their individual organisations.

Even with decentralisation, carried to the farthest point (and without this the whole organisation undoubtedly would break down), it was inevitable in the structure set up by the Transport Act that orders would not be executed as promptly as in the past. Instructions would filter down much more slowly to those people who had to carry them out, and they would have to be followed rigidly.

Regulations were inevitable in any large-scale organisation. During the war, the Road Haulage Organisation had attempted to control the operation of long-distance road transport in the interests of efficiency and fuel economy. It was notorious that the system set up often proved illogical and wasteful, very largely because of the necessity to comply exactly with instructions issued from higher up.

Although the Commission to begin with would have available the services of experienced men, brought up in the hard school of free enterprise, as time went on these men would be more difficult to find. It was rumoured that the Treasury was considering imposing salary standards on State-controlled undertakings, and one could not conceive that these standards would be particularly generous. There was provision in the Act that the status of the workers in the industry would not be lowered. Generally, however, the larger and more complicated the organisation, the better the brains required to run it, and it was difficult to see how these master minds could continue to be attracted into the Commission if the scale of remuneration was unsatisfactory.

Without further information, it was not easy to prophesy exactly how the Commission would work. He would like, however, to draw attention to at least one instance where the wrong approach had been made in setting up the structure of the Commission. A Railway Executive and Road Transport Executive were being appointed, and each of them included the operation of goods and passenger traffic. In road transport particularly, goods and passenger operators had nothing in common, except the roads and the fuel which their vehicles used. It was safe to say, therefore, that whenever the Road Transport Executive met, for 99 per cent. of the time half of the members would have little or no interest in proceedings. The same applied *mutatis mutandis* to the railways. The railway goods department and the railway passenger department had nothing in common, and the trains merely shared the same track, although in this case it was necessary to synchronise the times of running.

The Road & Rail Central Conference, of which he was the Joint Chairman, had been in existence for over eight years, both nationally and regionally, and members of the Conference would agree with him that the real affiliation was between road goods and rail goods. The same applied to passenger transport.

It is suggested, therefore, that it would be much more efficient if there were separate Executives for goods and passenger traffic rather than the Road Executive and Rail Executive. Then it would be necessary only to have liaison between the two Executives on the question of running times on the railways.

Road and rail co-ordination is particularly concerned with the carriage of goods. No official announcement had yet been made as to the function and future of long-distance transport under the Commission. Mr. Sewill said that he was in agreement with Lord Beveridge in visualising an inevitably diminishing sphere of usefulness for road haulage. The Commission had to balance its accounts from year to year, and in doing this it would unquestionably find that the standing costs of the railways are the most expensive item. The more long-distance road transport was developed and increased, however, the less traffic would be available for the railways, and the greater would be the possibility that they would run at a considerable loss. In these days of austerity, moreover, it is difficult to imagine the Commission ordering, or obtaining, large numbers of new lorries while railway wagons remain idle in sidings and every available lorry was sent for export. In short, co-ordination by the Commission meant the suppression of all long-distance road haulage except in the case of loads which it was impossible for the railways to carry.

It would be difficult to improve on the service given by express braked goods trains averaging 40 m.p.h. over long distances. The co-ordination proposals put forward by the railway General Managers and the Road Haulage Association last year had advocated placing special trucks at the disposal of hauliers. This, coupled with the system of delivery by road to railhead, was probably the key to true co-ordination. The trains should be made up of full wagon-loads and everything should be done to encourage traders to use this particular service. Timetables should be drawn up and they would ultimately become as well known as passenger timetables.

It was doubtful if the Commission would find its collection and delivery services profitable. The road-rail proposals envisaged joint arrangements being made to carry this particular type of traffic. The Commission almost certainly would find it cheaper to employ hauliers as agents for collection and delivery work, either individually or working through some co-operative organisation, particularly to and from the smaller stations. A system of railhead deliveries which would greatly increase the speed of transport on the railways was the goal at which the Commission should aim.

The Government, by excluding the "C" licenced operator from the Transport Act, automatically committed the Commission to a rating system for all higher or competitive classes of traffic. While the trader remained free to carry his goods where he liked in his own lorries, it was impossible for the professional providers of transport, whether privately- or publicly-owned, to increase the rate to the trader much above his own transport costs.

It must be left with the Commission to deal satisfactorily with this problem, from which there was no escaping. If, for instance, it was suggested that railway rates should still be based on what the traffic would bear, and road rates on costs, the inevitable result would be, either of increasing loss of traffic by the railways to "C" licensed vehicles, or a vast increase in the Commission's own long-distance lorry fleet, which again brought up the need for economising on new vehicles in the interest of the export drive.

BRITISH TRADE MISSION IN ARGENTINA.—A British trade mission consisting of officials from the Board of Trade, the Ministry of Supply, and the Ministry of Food will leave for Argentina at the end of October. One of the objects of the mission will be to secure some easing of the restrictions imposed on British imports into Argentina.

CURRENCY FOR FOREIGN TRAVEL.—At a Press conference on October 20, Commander R. G. Studd, Managing Director of the Polytechnic Touring Association, said that negotiations were now in progress whereby there would be some lifting of the travel ban. Talks between the British and European Governments were far advanced and he understood that an equal sum of money would be allowed to each country by the other for travel by their own nationals It was suggested that the British allowance would be about £40. Also, the tourist industry was seeking to capture a large part of the American trade, and as agents in the U.S.A. were unable to provide services in Europe, these services were being arranged by British companies. By this arrangement the whole cost of a tour averaging 1,200 dollars would be received by Britain and expenses paid in soft currencies.

PARIS METROPOLITAN STRIKE.—Members of a union not affiliated to the General Confederation of Labour called a strike on the Paris Metropolitan Railway on October 11, to support a claim for a wage increase of 11 per cent., a 42-hr. week, and recognition of their union. The union claimed to represent 1,250 of the 1,800 Metropolitan motormen. Later the strike became general, being supported by the General Confederation of Labour, but on October 17 a number of men from two of the unions concerned decided to return to work, enabling a limited service to be restored. An agreement was reached between the Government and all the workers on October 20. It has been agreed that no "sanctions" will be applied against the strikers, although the Government had decided on October 17 to apply a pre-war law enabling transport workers to be mobilised on a civilian basis, with severe penalties in case of refusal to comply with instructions. The question of pay is being left to be settled by the Metropolitan authorities.

Railway Students' Association

Presidential address by Sir Alexander Carr-Saunders

Sir Alexander M. Carr-Saunders, who has succeeded Sir Charles Newton as President of the Railway Students' Association (London School of Economics & Political Science), delivered his presidential address to the association on October 15. He is Director of the school.

Introducing Sir Alexander Carr-Saunders, Sir Charles Newton recalled that the membership of the association had increased from 469 before the war to 588 at the present time. This was something of which the committee might be proud, and spoke well for all their activities. It was his very pleasant duty to introduce their new President, and he was voicing the opinions of them all when he said how deeply they appreciated the fact that Sir Alexander Carr-Saunders had consented to occupy that position. They wished him a very happy year of office.

Sir Alexander Carr-Saunders, in his opening remarks, recalled the long association of the London School of Economics with the teaching of railway subjects. Just over 50 years ago there were 11 lecturers at the school, one of whom was Mr. (later Sir William) Acworth, who was lecturer in railway studies.

The late Lord Passfield, in speaking of the problems of teaching industrial or professional subjects, had quoted the instruction in railway affairs at the London School of Economics as a successful example of how this might be done. Their teaching had been interrupted only by two world wars, and they hoped that they would continue to do whatever was useful in this field.

He shared the general feelings of the public with regard to railways, and he thought it was clear that the railways had kept the interest of the public although so much else had happened in the realm of transport. The railways were still romantic, and, to judge from what one saw at the ends of station platforms, the younger generation still was enthralled by them. This widespread interest was a great asset to the railways. Of all the great services, he thought the standard of courtesy on the railways was the highest.

Railway Architectural Failings

He himself had a special interest in architecture, and there was no question as to the opportunities and responsibility of the railways in this direction. He thought, however, that this was something in which the railways had failed. For example, in the original scheme the famous arch at Euston had been flanked by four pavilions, making a very satisfactory architectural conception. In later years these pavilions had been partly mutilated, partly destroyed, and partly hidden. Kings Cross was a simpler conception, but extremely satisfactory. It had been obscured by the most appalling collection of rubbishy buildings in front.

At Cambridge a rectangular projecting block broke the continuity of the façade. It seemed that this had once been a portico under which coaches could drive to discharge their passengers, but when additional space in the buildings was required, the arches had been blocked up. He hoped that when the time for rebuilding came, the railways would live up to their responsibilities in station architectural matters.

There were signs of a change of mind in some small stations on electrified lines, as in the Wirral, and on the Southern Railway and London Transport. He spoke with appreciation, also, of the design of the railway hotel at Morecambe Bay.

The President inquired why the railways had not used some of their space for a shopping arcade in their main termini. He thought they had lost an opportunity in their bookstalls, which did not sell the type of literature that people really wanted to read, but aimed below the public taste. He would like to see the railways themselves take over this function and provide, first, kiosks for newspapers, and then bookshops.

He was critical, in addition, of railway policy with respect to advertising on their premises, quoting the disfigurement of bridges by posters. The railways must be slightly ashamed of this practice, for they did not do it very often.

Compartments Criticised

In railway coaches we had got the extraordinary system of putting people on benches opposite each other, with their knees knocking together. This system must have evolved from the fitting of cross benches in the open wagons in which early third class passengers travelled. He thought the railway method of seating was far behind what was provided in other places of public resort, but said that he had found agreeable certain coaches on the L.N.E.R. with basket chairs and tables between.

Railways were very disappointing in their potentialities for observing scenery. Travellers only got a sideways view, and there was inevitably a lot in the foreground which distracted attention from the view. He thought that observation cars on almost any line would be a great influence in attracting the public.

Sometimes the railways seemed reluctant to adopt suggestions. He had long been interested in the line from Oxford to Cambridge. Only twice in his experience had trains been put on that stopped only at Bletchley and Bedford. They had been taken off on account of lack of support before people had been given time to get used to them.

There was on certain railways, and particularly the G.W.R., a form of observation car in the shape of the railcar. He had found travel by railcar an exciting adventure. It provided something like a chair for each passenger, and there were opportunities of observation, at least to the rear, and also in one of the cars a most remarkable forward view.

Smooth and Silent Travel

He thought that if railways could begin with the railcar, and then proceed to eliminate vibration and noise, perhaps by putting it on rubber-tyred wheels, they would have got a mode of transport which would surpass anything road or air could provide. If people could glide noiselessly up and down the country in railcars, they would travel for the pure fun of it.

Mr. R. A. Riddles, Vice-President, L.M.S.R. (recently appointed a Member of the Railway Executive), proposed a vote of thanks to Sir Alexander Carr-Saunders, and to Sir Charles Newton for taking the chair at the meeting. He said that their new President need feel no diffidence at taking office with a railway association on the grounds that he had no direct association with railway working. Much was going to be changed on the railways, but the staffs had no need to be anxious about their prospects in the future.

Among those present at the presidential address were the following:—

Vice-Presidents of the association: Messrs. C. K. Bird, A. E. H. Brown, M. A. Cameron, G. Ponsonby, R. A. Riddles, C. E. R. Sherrington, A. B. B. Valentine.

Officers of the association: Messrs. T. Wing (Deputy Chairman of Committee), H. Bailey (Honorary Treasurer), S. E. Bellamy (Honorary General Secretary), C. A. Nisbet, A. F. Wallis (Honorary Organising Secretaries).

L.M.S.R.: Mr. M. G. Bennett.

L.N.E.R.: Messrs. M. R. Bonavia, E. G. Brentnall, J. T. Drinkwater, G. F. Fiennes, Colonel N. McK. Jesper, Messrs. K. A. Kindon, L. J. Moorcock, G. Shepherd.

G.W.R.: Messrs. A. E. C. Dent, E. Havers, C. A. Humphries, S. G. Ward.

Southern Railway: Mr. O. W. Cromwell.

British Transport Commission: Mr. M. A. Chapman.

Railway Executive: Mr. F. G. Dean.

L.P.T.B.: Messrs. R. Dell, C. E. Dunton, A H Grainger, P. G. James, H. E. Osborn.

Institute of Transport: Mr. C. F. King.

Railway Research Service: Mr. C. E. Whitworth.

Inaugural Train on Albanian "Youth Railway."—A Reuters message reports that members of the Albanian Government and the Diplomatic Corps greeted the first train to run on the "Youth Railway" on October 17. The line connects Drac with Elbasan, and has been built by labour supplied by a number of youth organisations.

G.W.R. Bridge Reconstruction at Bristol.—Work is being carried out on Sundays at Bristol on the Feeder Bridge, North Somerset Junction, carrying the Paddington-Penzance main lines over the canal just east of Temple Meads Station. The bridge, built in 1880, has a 108-ft. span, and the work involves the insertion of a track-strengthening girder at the west end, where the main lines are crossed by a loop line; and the partial renewal of the timber decking. Bristol Temple Meads Station is not being closed, but all main-line trains during the periods of occupation are being diverted over a relief line, and will back into and out of the station from Bristol West Junction. Trains to and from Frome start and terminate at Brislington, and passengers are conveyed between Bristol Temple Meads Station and Brislington by bus. The work began on Sunday, October 19, and is due for completion next Sunday, October 26.

Research Stations for Scotland.—The Lord President of the Council has decided that the new Mechanical Engineering Research Station, which is being set up by the Department of Scientific & Industrial Research, will be sited in Scotland. In addition, substations for fuel research, building research and road research also are to be established in Scotland by the department. The Mechanical Engineering Research Station is intended to undertake basic or generic work of the type which forms the groundwork of mechanical engineering development, and, in so doing, to supplement the invaluable work being undertaken already by leading Government, industrial, and university establishments in the mechanical engineering field. The decision to locate the stations in Scotland is in accordance with the principles of the Distribution of Industry Act passed by the Coalition Government, by which the setting up of new establishments in the development areas rather than near London is encouraged.

Swiss Federal Railways 1948 Budget

Higher costs reduce estimated credit balance

The working surplus of the Swiss Federal Railways for 1948 based on working receipts estimated at fr. 613,880,600 and working expenditure of fr. 461,944,985, has been calculated at fr. 151,935,615. This compares with fr. 213,337,453 for 1946, when working receipts totalled fr. 609,506,955, and working expenditure was fr. 396,169,502. The par rate of exchange is 25 Swiss francs to the £. It will be noted that the increase in working expenditure between 1946 and 1948 has been calculated at some 16 per cent., while the rise in receipts for the same period has been estimated at only ½ per cent. Expressed in figures, the increases foreseen work out at fr. 65,775,483 and fr. 4,373,645 respectively.

The budget for new works envisages an expenditure of fr. 114,900,000 for 1948, as compared with fr. 92,470,000 budgeted in 1947, and the actual expenditure of fr. 89,880,000 incurred in 1946. The most important items making up the 1948 total are expenditure for doubling certain sections of main lines; replacement of bridges; and the improvement of electrical safety installations. Electrification expenditure has been reduced in accordance with the programme of curtailing these activities for the sake of other work which had been postponed during the war and the first years of the post-war period.

Increased Outlay for Generating Plant

Expenditure on electrification is envisaged at fr. 1,882,000 for 1948, as compared with fr. 6,875,000 budgeted for 1947, and fr. 12,857,918 spent in 1946. On the other hand, the development of new sources of power supply will absorb fr. 7,476,700 in 1948, or nearly three times as much as was provided for 1947 (fr. 2,698,000), and almost seven times the expenditure incurred under the same head in 1946 (fr. 1,076,973).

Elecrification in 1948 will comprise mainly residual work on lines recently electrified, and preliminary work on sections to be electrified at a later date. Among the new undertakings is the Monthey-Bouveret-St. Gingolph (Suisse) section (12½ miles) of the St. Maurice-St. Gingolph single-track standard-gauge line connecting at the latter place with the French National Railways. The 4½-mile section between St. Maurice and Monthey has been converted already.

Preliminary electrification work is to be carried out also on the single-track standard-gauge line between Sissach and Olten *via* Läufelfingen (11¾ miles). This line uses the Upper Hauenstein Tunnel between the two places named, whereas the Basle-Olten main line uses the lower Hauenstein Tunnel, also between Sissach and Olten.

Among the more important items of construction either in hand or to be initiated during 1948, mention may be made of the following one: laying a second track between Fribourg and Matran, a distance of 3 miles, on the Lausanne-Berne main line; as well as between Olten-Hammer and Oensingen (10 miles) on the Olten-Soleure main line. In addition to this new work, the laying of a second track is to be continued on the Gotthard line between Brunnen and Sisikon) on the eastern shore of the Lake of Lucerne (a distance of 3¾ miles; and between Siebnen-Wangen and Ziegelbrücke (8¾ miles), and from Flums to Unterterzen (5 miles). Both sections are on the Zurich-Buchs main line.

The second track will be completed between Winterthur and Winterthur-Grüze (1¾ miles) on the Zurich-St. Gall main line. Work is to be continued on the new connecting line between Geneva, Cornavin and Geneva Eaux-Vives.

A longer mileage will be renewed in 1948 than in previous years in order to compensate for work which had to be postponed during the war and the early post-war years. Renewals with new material will total 102¼ route-miles in 1948, and those on which old material will be used will aggregate 35¾ route-miles. Total expenditure is estimated at fr. 37,700,000, as against the sum of fr. 33,600,000 budgeted for 1947.

The construction budget also comprises expenditure to be incurred in connection with rolling stock and locomotives (new and reconstructed). Expenditure in this connection for 1948, at fr. 28,400,000, exceeds the total of fr, 20,400,000 envisaged for 1947 by almost 40 per cent. The following main items of expenditure are included:—

	Francs
Electric locomotives and other power vehicles	11,000,000*
Passenger coaches and luggage vans ...	10,500,000†
Goods wagons and service vehicles ...	3,500,000‡
Reconstruction of locomotives and vehicles	2,700,000§

* Includes fr. 4,500,000 for orders to be placed during 1948, and the balance for previous orders. The expenditure budgeted for 1947 amounted to fr. 8,200,000.

† Includes fr. 3,700,000 for orders to be placed during 1948, and the balance for previous orders. The expenditure budgeted for 1947 amounted to fr. 7,300,000.

‡ Includes fr. 1,800,000 for vehicles to be ordered during 1948, and the balance for previous orders. The expenditure budgeted for 1947 was only fr. 700,000.

§ Includes fr. 900,000 for locomotives and other power vehicles and the balance for coaching stock. The expenditure budgeted for 1947 amounted to fr. 3,700,000

The profit and loss account for 1948 is expected to close with a credit balance of only fr. 2.800,000, which is far below that envisaged for 1947 (fr. 19,200,000), and considerably lower than the credit balance of fr. 25,400,000 attained in 1946. This decrease is due exclusively to the considerable increase in working expenditure referred to earlier. On the other hand, combined depreciation and capital cost within the framework of the profit and loss account will be lower in 1948 than in 1946, or as foreseen for 1947. In this connection, it is recalled that, as a result of the financial reconstruction carried out in 1944, depreciation constitutes the highest charge on the profit and loss account. For 1948, depreciation has been estimated at fr. 73,807,800, or fr. 37,200,000 less than 1946, but about fr. 1 million more than envisaged for 1947.

Questions in Parliament

Railway Pension Rights

Before the House of Lords rose for the summer recess the Earl of Mansfield handed in the following question for a written answer: To ask His Majesty's Government if it would give an assurance that, should the railways of this country be transferred to national ownership, the right of any railway official now retired, or who might subsequently retire, would be preserved to take up any form of employment or gainful occupation, without prejudice to the payment of the pension in full, without regard to the amount of the additional wages or emoluments.

The following reply from Lord Walkden has been received by the Earl of Mansfield: I can assure the Earl of Mansfield that there is no intention of imposing any new conditions as to the payment of pensions to railway servants now retired or to existing railway servants who are pensionable on retirement unless by mutual agreement.

De-Icing Device for Conductor Rails

De-icing device fitted in the positive and negative conductor rails on the Western Extension to Greenford. This arrangement has been adopted experimentally by the London Passenger Transport Board for spreading on a thin film of de-icing liquid

ABSTRACTS OF RECENT PATENTS*

No. 576,173. Shock Absorbing Mountings

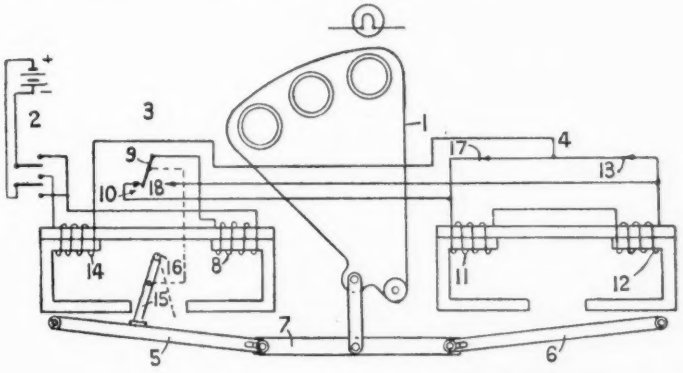
*Silentbloc Limited and P. C. Hutton, both of Victoria Gardens, London, W.*11. (*Application date : February* 21, 1944).

A flexible shock-absorbing mounting comprises an inner metal tube having a covering rubber sleeve bonded to it, of which the outside diameter is slightly less than the inside diameter of an outer metal tube so as to be able to slide freely longitudinally within it. The inner member is located in the outer tube by a flexible annular diaphragm at each end, bonded to both metal tubes. This construction provides a mounting which is flexible to longitudinal thrusts but resists very heavy loads in radial directions.

No. 576,513. Colour-Light Signals

Westinghouse Brake & Signal Co. Ltd., of 82, *York Way, London, N.*1, assignee of W. B. Wells, of Wilkinsburg, Pennsylvania, U.S.A. (*Convention date : May* 29, 1943).

A three-position signal, having a moveable screen member 1, is set by a pole-changing switch 2 controlling magnets 3, 4, whose armatures, 5, 6, are linked to a member 7 so that the signal is red when both are de-energised; yellow when one is energised; and green when both are energised. With switch 2 in its middle position, no current flows, and the signal is set at red. If it is moved to its lower position, current flows through winding 8, contacts 9, 10, windings 11, 12, rectifier 13, and winding 14. However, with current in this direction, a polarised armature 15, pivoted at 16, is held to the left and locks armature 5 down. Only magnet 4 is thus effective, and the signal is set at yellow.



'R.G' 576,513/43

When switch 2 is now moved to its upper position, current flows through winding 14, rectifier 17, contacts 10, 9, and winding 8. Armature 15 now is moved over, allowing armature 5 to be attracted, and moving contact 9 over to contact 18, so energising magnet 4. Both armatures now being attracted, the signal is set to green. If the switch 2 is moved back to its lower position from its upper position, the initial circuit includes winding 8, contacts 9, 18, rectifier 13, and winding 14. This moves armature 15 back to the left and moves contact 9 over, the latter action momentarily releasing armature 5, which becomes locked by 15, and completing the circuit given above for energising magnet 4. Thus the signal again moves back to yellow.

No. 576,424. Resilient Mountings

A.V.A. Limited and T. H. Pentony, both of 185-188, *High Holborn, London, W.C.*1. (*Application date : December* 24, 1943).

A shock-absorbing mounting consists of two plates attached to the ends of a helical spring and with the spring embedded in rubber, which is bonded also to the end plates. The plates carry threaded rods or other means for attachment to the parts to be joined.

No. 576,482. Forced Feed Lubrication

Tecalemit Limited, and C. C. S. le Clair, both of Tecalemit Works, Great West Road, Brentford. (*Application dates : November* 26, 1943, *and December* 13, 1943).

The oil feeds to the various bearings are each led through an individual restriction valve, and a pressure gauge is connected between each valve and the corresponding bearing.

The various valves are adjusted until the gauges show a pressure approximately half that of the pressure indicated by a gauge connected to the main oil supply line. If any bearing becomes faulty, as by overheating, or its supply pipe becomes partly blocked, the pressure in the corresponding gauge varies accordingly and the fault is immediately apparent.

No. 576,258. Locknuts

C. B. Liddell, of Flat No. 1, 23, *Embankment Gardens, London, S.W.*3. (*Application date : May* 4, 1944).

In a pair of locking nuts the main nut has a conical recess in its outer face into which fits a projecting conical face on the locknut. The angle of the cone on the locknut is slightly less than that on the main nut, and is slotted axially to give it flexibility. When the locknut is tightened, its conical portion is thrust inwards by the main nut on to the bolt.

No. 576,408. Lubricators

The Stroud Metal & Plating Co. Ltd., of Stroud, and R. Taussig, of 39, *Amerland Road, London, S.W.*18. (*Application date : September* 26, 1944).

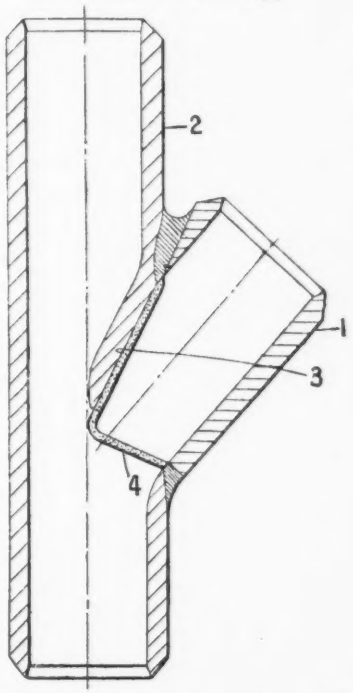
A cover for an oil lubricator has a circular portion of channel cross-section which holds closely fitting segments of oil-resisting rubber, preferably three in number. The spout of an oil-can is able to press the central parts of the segments inwards owing to their flexibility, and when it is withdrawn they return to their original positions and effectively close the aperture.

No. 576,406. Branch Pipe Fittings

*Babcock & Wilcox Limited, of Babcock House, Farringdon Street, London, E.C.*4. (*Convention date : September* 23, 1943).

In order to provide even flow of fluids through branch connections for pipes, the branch pipe 1 enters the main pipe 2 at an acute angle and a diaphragm 3 extends inwardly from the acute angle of the junction to a point approximately on the centre line of the limbs, 1, 2, around the edge, shown at 4.

'R.G.' 576,406/43



When this fitting is used as a distributor, substantially equal flows through the two branches can be obtained.

No. 576,762. Door Hinges

N. Draper, of 244, *Molesey Avenue, West Molesey.* (*Application date : May* 8, 1944).

In order to ensure adequate lubrication of a hinge exposed to the weather, the hinge pin is made in tubular form and has end caps screwed to it where it projects at each end of the hinge. The hollow pin is filled with lubricant, such as oil or thin grease, and this finds its way to the working parts of the hinge through radially drilled holes.

At suitable intervals the end caps may be removed and the pin refilled with lubricant.

Complete Specifications Accepted

577,116. Mitchell, J. Fluid cocks and valves.

577,356. Metalastik Limited, Napier, D., & Son Ltd., and Zdanowich, R. Vibration damping mountings.

* These abridgments of recently published specifications are specially compiled for *The Railway Gazette*, by permission of the Controller of His Majesty's Stationery Office. Full specifications can be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, price 1s. each

Notes and News

Assistant Accountant Required.—An assistant accountant, not over 32 years of age, is required by the Nigerian Government Railway for one tour of 18 to 24 months with possible permanency. See Official Notices, page 479.

Sales Engineer Required.—A sales engineer with diesel locomotive background combined with knowledge of diesel and diesel-electric traction practice is required for responsible position with prominent engineering concern. See Official Notices, page 479.

Shunting Firemen and Guards Required.—There are vacancies on the Rhodesia Railways for shunting firemen and guards. Applicants must be single men. Candidates for position of shunting firemen must be between 18 and 25, and for the position of guards not less than 21 years of age. See Official Notices, page 479.

Treaty of Independence for Burma.—By the terms of the Anglo-Burmese Treaty, signed in London on October 18, Burma will acquire complete independence outside the British Commonwealth. The text of the treaty will not be published until the Bill for the transfer of power from Britain to Burma is introduced into Parliament. The British Government intends to make the transfer of power effective by the end of this year. Every aspect of the future relations between the two countries is covered by the treaty, including defence, communications, finance, and trade.

"All-L.M.S.R." Music Hall Show.—On October 20, at St. Pancras Town Hall Theatre, the L.M.S.R. staff news magazine, *Carry On*, presented a music hall show in aid of the orphan fund of the National Union of Railwaymen. Mr. Jim Peasey (driver, Cricklewood), who also entertained the audience with ingenious conjuring tricks, produced the show; Mr. Jack Ody (porter, Euston) was the compere, and Mr. Bert Sabey (Railway Service Representative, Broad Street), the accompanist. The L.M.S.R. (London) Orchestra played under Mr. John Grindley (Chief Accountant's Office), its Musical Director. The L.M.S.R. artists were Miss Eileen Paul, Miss Mary Lobeck, Mr. Rex Steele, Mr. Bill Groves, Mr. Jim Peasey, Mr. Watkin Gutteridge, Miss Kitty Shears, Mr. Bill Southern, Mr. Percy Fleet and Mr. Bert Sabey. Fourteen-year-old Miss Jean Gamble, and Miss Margaret Evans, whose fathers are members of the L.M.S.R. staff, entertained the audience with songs. Mr. Carroll Gibbons, Miss Ann Trevor and Mr. John Moore, appeared as guest artists.

Southern Railway ss. "Falaise" on "Golden Arrow" Route.—The newest Southern Railway cross-Channel ship, the ss. *Falaise*, which this year restored the Southampton—St. Malo direct link with France, replaced the ss. *Invicta* on October 20 on the "Golden Arrow" (Dover—Calais) service while the *Invicta* undergoes a routine overhaul. The *Falaise*, fitted with radar, is able to run in foggy weather, and her improved Denny-Brown stabiliser should reduce considerably the motion of the ship in rough weather. An illustrated description of the *Falaise* appeared in our July 25 issue.

Southern Railway Road Horse-Boxes.—The first of three new Southern Railway road motor horse-boxes, which is illustrated in the photograph reproduced below, was put in service last week, thus restoring a facility interrupted by the war, when the entire small Southern fleet of horse-boxes was destroyed in an air raid. These new boxes, which are fitted with a modern ventilation system, can carry three horses each and have ample space for grooms and fodder. They will provide a quick and comfortable transport service between Southern and other railway stations in London, and they will be available, also, for direct transit by road to and from shows, racecourses, etc. The chassis is a Maudslay Marathon Mark II single-deck bus fitted with a Maudslay six-cylinder petrol engine of 45 h.p.

G.W.R. Zonal Scheme Progress.—With the introduction of the Aberystwyth zone on November 1, the G.W.R. domestic zonal scheme for expediting miscellaneous goods traffic will be completed. This organisation is described in an article of which the first part appears on page 461 this week. Aberystwyth will have sub-railheads at Machynlleth and Lampeter; there will be 36 absorbed stations in the zone, which covers an area of 950 square miles. At first, Aberystwyth will operate in conjunction with Machynlleth and its 12 absorbed stations alone. At a later date the Lampeter sub-railhead, absorbing 10 stations, will begin to function, and Aberystwyth will absorb the remaining 14 stations covered by the zonal arrangements. Other changes coming into effect in G.W.R. domestic zones are: opening

New Southern Railway Horse-Box

The first of three new Southern Railway road horse-boxes for inter-station work or direct transit (See paragraph above)

British and Irish Railway Stocks and Shares

Stocks	Highest 1946	Lowest 1946	Prices Oct. 21, 1947	Prices Rise Fall
G.W.R.				
Cons. Ord.	61½	54½	54	– 1
5% Con. Pref. ...	126½	107	114½	—
5% Red. Pref. (1950)	106½	102½	98½	—
5% Rt. Charge ...	140½	122½	127½	—
5% Cons. Guar. ...	137½	118½	126½	—
4% Deb.	129½	106	119	—
4½% Deb.	129½	107	119	—
4½% Deb.	130½	114	120½	—
5% Deb.	142½	125	131½	+ 1
2½% Deb.	95½	81½	88½	—
L.M.S.R.				
Ord.	30½	26½	26¾	– ¼
4% Pref. (1923) ...	64	52½	57	— ¼
4% Pref.	86	75½	77½	– ½
5% Red. Pref. (1955)	105½	97	96½	—
4% Guar.	108½	100	99	—
4% Deb.	120	103	109½	—
5% Red. Deb. (1952)	108½	105½	100¼xd	– 1
L.N.E.R.				
5% Pref. Ord. ...	7	5	6½	—
Def. Ord.	3½	2½	3½	—
4% First Pref. ...	59½	50½	53	– ½
4% Second Pref. ...	29½	25¾	26½	—
5% Red. Pref. (1955)	104	97	94½	+ 1
4% First Guar. ...	107	98	97½	—
4% Second Guar. ...	101	90	91½	—
3% Deb.	104	87½	95	—
4% Deb.	119½	102½	109	—
4½% Sinking Fund Red. Deb. ...	107½	101½	98½	—
SOUTHERN				
Pref. Ord.	79½	70	70½	– ¼
Def. Ord.	24	19½	22½	– ¼
5% Pref.	125½	107	113½	—
5% Red. Pref. (1964)	115½	106½	105½	—
5% Guar. Pref. ...	137½	119	126½	—
5% Red. Guar. Pref. (1957)	115½	107½	105½	+ 1
4% Deb.	129½	105½	119	—
5% Deb.	139½	125½	128½	—
4% Red. Deb. (1962-67)	113½	104½	104½	—
4% Red. Deb. (1970-80)	115½	104½	105½	—
FORTH BRIDGE				
4% Deb.	109	103	98½	—
4% Guar.	105	102	94½	—
L.P.T.B.				
4½ "A"	133½	120½	121½	—
5% "A"	142½	130½	130½	—
3% Guar. (1967-72)...	108	98½	97½	+ 2
5% "B"	128½	117½	117½	—
"C"	64½	56½	61½	—
MERSEY				
Ord.	34	30	32½	—
3% Perp. Pref. ...	76	69	68½	—
4% Perp. Deb. ...	117½	103	106	—
3% Perp. Deb. ...	98	81	88½	—
IRELAND*				
BELFAST & C.D.				
Ord.	8⅛	6	7½	—
G. NORTHERN				
Ord.	41⅞	30½	25	– ½
Pref.	63⅜	52	41	—
Guar.	97½	78½	72	—
Deb.	107	97½	92	– 3
IRISH TRANSPORT				
Common	19/2½	16/9	12/9d.	– 4½d.
3% Deb.	107	100	101	+ ½

* Latest available quotation

OFFICIAL NOTICES

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

VACANCIES are available on the Rhodesia Railways Limited for Shunting Firemen and Guards. Applicants must be single men. Candidates for position of Shunting Firemen must be between the ages of 18 and 25, of good physique, and not less than 5 ft. 6 in. in height, and for the position of Guards not less than 21 years of age. Commencing wage for Shunting Firemen £24 13s. 0d. per month and for Guards 20s. 2d. per day for every day in the month. There is also a temporary cost-of-living allowance, at present 21 per cent. of these wages.

Apply in writing to the SECRETARY, RHODESIA RAILWAYS LIMITED, 11, Old Jewry, London, E.C.2, submitting full name, age, and particulars of experience

PLASTICS IN RAILWAY ENGINEERING. By T. Lovatt Williams and D. Warburton Brown. 1s. *By post* 1s. 2d.

Crown Agents for the Colonies

APPLICATIONS from qualified candidates are invited for the following post:—

ASSISTANT ACCOUNTANT required by the Nigerian Government Railway for one tour of 18 to 24 months, with possible permanency. Salary, including expatriation pay, £600 rising to £1,200 a year. Commencing salary according to age and war service. Outfit allowance £60. Free passages. Candidates not over 32 years of age and preferably single, should be Associate Members or Students of one of the recognised appropriate professional bodies and should have had experience in one of the following branches of accountancy:—Railway Revenue and Station Accounts; Civil or Mechanical Engineering Accounts and Costing; Statistics by Punched-Card Systems; Calculation and Payment of Wages; Stores Accounts; General Double-Entry Book-keeping.

Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/16797 on both letter and envelope.

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of Abergavenny as a sub-railhead in the Newport zone; absorption by Plymouth of four stations not originally catered for; and absorption by Pontypridd of 6 more stations not originally catered for. Also on November 1, the Shrewsbury and Wrexham railheads will begin to operate jointly with the L.M.S.R.

Firth Brown Steels.—A new public company, Firth Brown Steels Limited, was registered on October 7, with a capital of £50,000, to carry on business as ironmasters and manufacturers of, and dealers in, steels, etc. Among the directors are Lord Aberconway, Chairman, John Brown & Company, and Sir Arthur Matthews, Managing Director, Thos. Firth & John Brown Limited.

L.N.E.R. 4½ per cent. Sinking Fund Debenture Stock.—Notice has been given that the terms of the Transport Act preclude the redemption on January 1, 1948, of part of the London & North Eastern Railway Company's 4½ per cent. sinking fund debenture stock, and accordingly the draw hitherto held in November in each year will not take place.

Beer Transport by Rail.—A new method of transporting beer from Scotland to England has been introduced by the L.N.E.R. Two tanks, vitreous enamel lined and having a capacity of 1,080 gal. or 30 barrels, were used originally for conveying beer by road from Edinburgh to a bottling warehouse at Tyne Dock. These tanks have been converted by the L.N.E.R. into demountable rail tanks for transport in specially fitted wagons. Provided with lifting lugs, they can be unloaded from the rail vehicle to a road motor which delivers them to their final destination, and the service provides for delivery on Tyneside the morning following the day of despatch from Edinburgh.

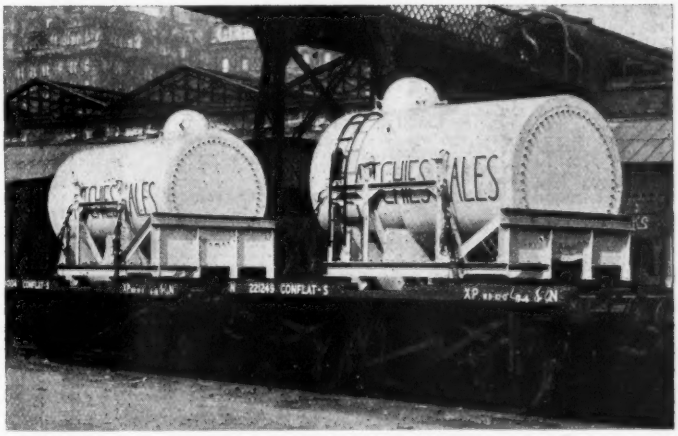
Revision of Methods of Steel Allocation Control.—Sir Stafford Cripps, Minister of Economic Affairs, on October 14 stated that a committee presided over by Mr. H. A. Marquand, Paymaster-General, had recommended a revision of methods of control of steel allocations. The committee's report had been approved by the Government and revised methods of control in the course of some months could get rid of the excessive volume of "M" authorisation forms. The revised scheme was the product of joint consultation with industry.

San Paulo Railway Expropriation Payment.—It is reported that the Brazilian Finance Minister, Senhor Vieira Machado, had asked the Brazilian Congress to authorise the payment of £6,639,000 to the San Paulo (Brazilian) Railway Co. Ltd. from Brazil's sterling balances, and that Congressional sanction is expected soon. During his three months of negotiations at the British Treasury last Spring, the Minister obtained a full insight into the position not only of the San Paulo Railway, but also of the British-owned railways and other utilities in Brazil, and of the country's sterling balances as a whole. This payment, which it is assumed will include interest at 7 per cent. since November 8 last, would be for the recognised capital of the San Paulo company. A Decree expropriating the railway was signed by the President of Brazil on November 8 last year, as recorded in our December 27, 1946, issue. A claim by the company for a further £7,259,000 made in accordance with the terms of the Decree, is still under negotiation.

Increased Production of Steel.—Mr. G. R. Strauss, Minister of Supply, at a meeting at Cardiff on October 17, said that the weekly average production of steel ingots and steel castings in September was 266,200 tons, representing an annual rate of 13,841,000 ingot tons. The provisional figure of steel ingots and castings production for the week ended October 4 showed that output was running at an annual rate of more than 14,200,000 tons.

London Transport Bus Crisis.—At a Press conference on October 17, Mr. A. A. M. Durrant, Chief Mechanical Engineer (Road Services), London Transport, explained how London's bus services have been maintained under most difficult conditions in recent months. The situation was caused by non-delivery of new buses and a large-scale breakdown in the supply of spare parts. During the war few new buses were received and existing fleets became worn out; a considerably increased supply of spare parts was needed to keep these old fleets going until new buses arrived. The maintenance difficulties had been overcome, however, and the first 80 of the long-delayed orders for post-war buses have been received recently; it is hoped to increase delivery to over 100 buses a month in 1948.

Beer Transport by Rail



Two tanks of a capacity of 1,080 gal. converted by the L.N.E.R. for the transport of beer by rail instead of by road from Scotland to England (See paragraph above)

Forthcoming Meetings

October 28 (*Tues.*)—Stephenson Locomotive Society, headquarters meeting at 32, Russell Road, London, W.14, at 6.30 p.m. "The Somerset & Dorset Joint Railway: Its History and Working," by Mr. D. S. Barrie.

November 3 (*Mon.*)—The Institute of Transport, at Livingstone House, Broadway, London, S.W.1. 6 p.m. "Transport" by Mr. James Callaghan. (Parliamentary Secretary, Ministry of Transport).

Railway Stock Market

Confirmation of the sale of another £30 millions of gold to the United States, and news of the purchase of a further $120 million from the International Monetary Fund, emphasised the seriousness of the economic crisis, and as a result stock markets displayed continued caution. British Funds failed to hold best levels, but were again higher on balance. Industrial shares were better in some instances on the view that they had fallen unduly owing to Budget fears, although moderate improvement in prices earlier in the week was due to " bear " covering. The King's Speech opening the new session of Parliament was studied carefully for any indications of new Government measures, but the prevailing view was that it will be impossible to judge the outlook for industrial shares on a sound basis until the Budget proposals are known. The City is still expecting a substantial increase in taxation of company profits, but on the other hand it is pointed out that even if the Purchase Tax were doubled many companies playing a vital part in overseas trade would be able to pay higher dividends if export targets were achieved.

Conflicting views whether it will be possible for official support for the market to restore 2½ per cent. Consols and Treasury Bonds to within sight of par appear to be confusing investors as to the possibilities attaching to home rails. The general belief in the City at the moment is that on present indications it will be impossible to return these stocks to a 2½ per cent. yield basis and that it is therefore unlikely that British Transport stock can be a 2½ per cent. long-dated security. Many commentators are suggesting that British Transport stock may in fact prove to be medium-dated, carrying 3 per cent. interest, or perhaps a 2½ per cent. short-dated stock. It is clear, however, that Mr. Dalton wishes interest not to exceed 2½ per cent.

It is possible that the Budget may be designed partly to force into British Funds the weight of money awaiting investment, and that before the end of the year official support on a considerable scale might reinforce an upward trend in British Funds. It should not be overlooked, however, that whether British Transport interest proves to be 2½ per cent. or 3 per cent., home railway stocks still offer attractions from the point of view of capital appreciation, because of the reasonable prospects of them approximating to take-over levels before the end of the year. Home rails, in fact, represent an attractive short term investment, and as regards the ordinary stocks, there still seem possibilities of the final dividend payments containing a number of pleasant surprises.

There has been rather more activity in foreign rails, with San Paulo the feature, a jump of 12 points to 172 following renewed reports that the Brazilian Congress will be asked to agree to Brazil's sterling balances providing the purchase money for the railway. Hopes that delay in making a payment will not be continued for a further period (the railway was taken over more than a year ago) have been accompanied by reports that negotiations regarding payment for the company's " outside " interests are proceeding. The market is continuing to assume that if the outcome of the latter is in line with expectations, San Paulo ordinary stock may in due course be worth over £200. The company's preference stock has now improved to 92½.

Leopoldina Railway ordinary and preference strengthened to 14 and 39 respectively, but other Brazil railway stocks attracted little business. On the other hand, more attention has been given to Central Uruguay issues, with the second debentures slightly higher at 67 on talk of probable " take-over " developments early next year.

Argentine rails have been dull in the absence of news from Buenos Aires of further developments in connection with the U.K.—Argentine currency negotiations. The latter presumably will have to be completed before the railway agreement is ratified by Argentina. Meanwhile, prices of the various stocks remain well below share-out levels, most of the 4 per cent. debentures being 9 points under the latter. After a good rally to 19 in anticipation of purchases for redemption, United of Havana 1906 debentures fell back to 16. Elsewhere, Canadian Pacifics eased to slightly under 18.

There was steadiness in iron and steel shares, helped by further news of expanding steel production; and shares of locomotive building and engineering companies also were firm. Elsewhere, Hopkinsons rose strongly to £5 following the increased interim dividend, and Thos. W. Ward jumped to 46s. 6d. on the big advance from £160.856 to £295.958 in profits and the raising of the year's distribution from 12½ per cent. to 15 per cent., which exceeded market expectations.

Traffic Table and Stock Prices of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffic for week: Total this year	Traffic for week: Inc. or dec. compared with 1945/46	No. of Week	Aggregate traffics to date: Totals 1946/7	Aggregate traffics to date: Totals 1945/6	Aggregate traffics to date: Increase or decrease	Stock	Prices: Highest 1946	Prices: Lowest 1946	Prices: Oct. 21, 1947
				£	£		£	£	£				
South & Central America	Antofagasta	834	12.10.47	45,800	+ 14,740	41	1,722,180	1,347,560	+ 374,620	Ord. Stk.	11	10½	10½
	Arg. N.E.	753	11.10.47	ps.372,500	+ps.85,200	15	ps.4,907,300	ps.4,725,800	+ ps.181,500	,,	17	5	10
	Bolivar	174	Sept., 1947	$95,194	− $13,743	39	$968,030	$969,834	− $1,804	6 p.c. Deb.	6½	5½	22½
	Brazil	—	—	—	—	—	—	—	—	Bonds	30	26	43
	B.A. Pacific	2,771	11.10.47	ps.2,710,000	+ps.210,000	15	ps.37,635,000	ps.32,528,000	+ ps.5,107,000	Ord. Stk.	8½	5½	10
	B.A.G.S.	5,080	11.10.47	ps.3,385,000	+ps.327,000	15	ps.49,349,000	ps.48,397,000	+ ps.952,000	Ord. Stk.	16	10½	16
	B.A. Western	1,924	11.10.47	ps.1,408,000	+ps.141,000	15	ps.20,667,000	ps.17,703,000	+ ps.2,964,000	,,	19	9½	21
	Cent. Argentine	3,700	11.10.47	ps.3,556,200	+ps.414,650	15	ps.49,373,960	ps.46,613,055	+ps.2,760,905	,,	10½	7½	17
	Do.	—	—	—	—	—	—	—	—	Dfd.	6	4½	11½
	Cent. Uruguay	970	12.10.47	28,230	− 8,071	15	473,823	529,651	− 55,828	Ord. Stk.	8½	3½	22½
	Costa Rica	262	Aug., 1947	30,665	+ 1,689	9	63,523	58,650	+ 4,873	Stk.	15	12	9
	Dorada	70	Aug., 1947	31,100	− 4,300	35	243,900	256,775	− 12,875	1 Mt. Deb.	102½	99½	108
	Entre Rios	808	11.10.47	ps.431,700	+ps.57,100	15	ps.6,585,600	ps.6,254,400	+ ps.331,200	Ord. Stk.	9	5½	10
	G.W. of Brazil	1,030	11.10.47	43,800	+ 9,000	41	1,300,800	1,138,200	+ 162,600	Ord. Stk.	26/6	20/−	3½
	Inter. Ctl. Amer.	794	Aug., 1947	$1,049,057	+$217,646	35	$9,012,068	$7,303,649	+ $1,708,419	—	—	—	—
	La Guaira	22½	Sept., 1947	$105,861	− $9,279	39	$988,095	$1,059,566	− $71,471	5 p.c. Deb.	70	58	83½
	Leopoldina	1,918	11.10.47	61,917	− 8,944	41	2,729,556	2,447,776	+ 281,780	Ord. Stk.	5	3½	13½
	Mexican	483	31.5.47	ps.1,464,000	+ps.459,100	22	ps.7,706,200	ps.13,441,600	+ ps.5,220,000	Ord. Stk.	1¾	¾	1
	Midland Uruguay	319	Aug., 1947	16,601	− 4,384	9	32,448	39,969	− 7,421	—	—	—	—
	Nitrate	382	15.10.47	6,088	− 7,325	41	178,642	167,893	+ 10,749	Ord. Sh.	83/9	71/3	63/9
	N.W. of Uruguay	113	Aug., 1947	3,791	− 3,087	9	7,778	11,581	− 3,805	—	—	—	—
	Paraguay Cent.	274	10.10.47	$70,510	+ $18,232	15	$800,751	$908,445	− $107,694	Pr.Li.Stk.	78½	60	47½
	Peru Corp.	1,059	Sept., 1947	185,580	+ 29,801	13	517,763	476,463	+ 41,300	Pref.	16½	8¾	8
	Salvador	100	July, 1947	c75,000	− c7,000	4	c75,000	c82,000	− c7,000	—	—	—	—
	San Paulo	153½	—	—	—	—	—	—	—	Ord. Stk.	119½	52½	172½
	Taltal	156	Sept., 1947	5,410	− 800	13	16,415	13,260	+ 3,155	Ord. Sh.	22/6	15/3	20/−
	United of Havana	1,301	6.9.47	57,974	+ 12,420	10	597,603	541,437	+ 56,166	Ord. Stk.	2	1¼	2
	Uruguay Northern	73	Aug., 1947	1,111	− 365	9	16,700	19,939	− 3,239	—	—	—	—
Canada	Canadian National	23,535	Aug., 1947	9,254,750	+ 482,750	34	71,822,500	63,922,500	+ 7,899,750	—	—	—	—
	Canadian Pacific	17,037	Aug., 1947	6,652,500	+ 348,000	35	51,289,000	47,182,000	+ 4,107,000	Ord. Stk.	25¼	16½	18
Various	Barsi Light†	202	Sept., 1947	20,947	+ 5,362	26	159,525	144,900	+ 14,625	Ord. Stk.	123½	111	104½xd
	Beira	204	July, 1947	98,525	+ 7,271	41	927,422	767,420	+ 160,002	—	—	—	—
	Egyptian Delta	607	20.9.47	17,482	− 1,260	25	279,076	291,196	− 12,120	Prf. Sh.	9¼	5	6
	Manila	—	—	—	—	—	—	—	—	B Deb.	75	60	72½
	Mid. of W. Australia	277	Aug., 1947	20,028	+ 4,576	9	37,716	29,947	+ 7,769	Inc. Deb.	85	70	74½
	Nigeria	1,900	July, 1947	296,272	− 73,139	17	1,339,004	1,490,315	− 151,311	—	—	—	—
	Rhodesia	2,445	July, 1947	579,717	+ 30,734	41	5,558,202	5,149,365	+ 432,837	—	—	—	—
	South African	13,323	20.9.47	1,274,537	+ 73,135	25	30,706,860	27,444,417	+ 3,262,443	—	—	—	—
	Victoria	4,774	May, 1947	989,352	− 361,928	48	—	—	—	—	—	—	—

† Receipts are calculated @ 1s. 6d. to the rupee